



JPRS Report

Proliferation Issues

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PROLIFERATION ISSUES

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5 March 1993

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Journal Proposes Developing Nuclear Carrier, Lasers

*OW2402094593 Tokyo KYODO in English 0927 GMT
24 Feb 93*

[Text] Beijing, Feb. 24 KYODO—China's crusade to build the world's most powerful navy should include plans to develop a nuclear-powered aircraft carrier, laser weapons, and sea-launched neutron bombs, a leading naval journal has said.

Such sophisticated weapons are needed to bridge the technology gap between China and its two principal naval competitors, the United States and the Commonwealth of Independent States, according to the February edition of "MODERN SHIPS," a monthly magazine published by the China Naval Ships Research Academy.

In a four-page analysis, co-authors Tian Ping and Long Jiu said Beijing's top military priority should be naval expansion because "the biggest threat to national security and development comes primarily from the ocean."

"Hence, the navy must be the focal point of China's bid to build a modern military force," the article said.

Despite being the world's third most powerful fleet, China's Navy lacks key elements, including aircraft carriers, battle cruisers and a strong antisubmarine capability, it said.

The article's forthright tone contrasts sharply with recent Foreign Ministry assertions that China has no intention of expanding naval power in order to stamp its authority on the region.

"In the short-term, the central strategic task of naval construction must be to transform the Navy from a

coastal defense force into an offshore fleet capable of defending territorial interests," it said.

And while admitting that China's current economic strength is insufficient to allow for a "globe-trotting" Navy in the near future, the article said it would be possible to build a "blue sea fleet" by the beginning of next century.

"This fleet's main tasks will be to control nearby waters, notably by exercising air and sea control in the East China and South China Seas to protect territorial waters and to defend shipping lanes," it said.

The two authors, whose job titles were not disclosed, said financial constraints can be minimized if China sheds some of its 340,000 naval personnel, freeing more funds to develop advanced weapons systems.

"Is it really worth spending such a large proportion of the naval budget on manpower?," they asked, identifying several key areas where quality should come before quantity.

China should move quickly to build a nuclear-powered aircraft carrier and establish a carrier fleet, the article said. "Laser weapons systems must also be developed."

Research into neutron bombs and other specialized nuclear weapons is also needed both for offensive and defensive purposes, it said.

"China's past failing has been to acquire second-rate weapons technology, therefore we must possess top-notch technical experts and research methods," it said.

The article also said, "provided we concentrate our strength and tackle key problems, it is entirely feasible for China to catch up with advanced technological levels by around the year 2000."

INDONESIA

France Offers Satellite Launch Cooperation

BK1302134793 Jakarta Radio Republik Indonesia Network in Indonesian 0000 GMT 13 Feb 93

[Text] The minister of state for research and technology, B.J. Habibie, said Indonesia is unable to confirm whether or not it will use the service of European space agency Ariane Space to launch its Palapa B-2 satellite into orbit. Responding to an offer from the French minister of research and technology to launch Indonesia's Palapa B-2 via Ariane Space rocket in Jakarta yesterday, Minister Habibie said that the government will study the matter first, especially in connection with the preeminence of the offer which has been put forward, punctuality, costs, and level of risks to be encountered.

France has also suggested that Indonesia's Board of Technical Research and Application cooperate with Ariane Space to launch free of charge a small rocket produced by the National Aviation and Space Institute (LAPAN).

The French minister of research and technology is visiting Indonesia to evaluate bilateral relations and cooperation in general, and cooperation in modern maritime technology in particular.

France has also offered cooperation on safety and technological aspects of construction of Indonesia's nuclear power plant. The offer was disclosed by the French minister to newsmen following his meeting with Minister Habibie in Jakarta. He said that France has many nuclear stations and a lot of experience with environmental and safety aspects of nuclear energy.

NORTH KOREA

IAEA To Conduct Special Inspections of DPRK

ROK Supports Decision

SK1002090293 Seoul YONHAP in English 0850 GMT 10 Jan 93

[Text] Seoul, Feb. 10 (YONHAP)—South Korea concluded on Wednesday that North Korea needs to allow the International Atomic Energy Agency (IAEA) to conduct a special inspection and decided to support the IAEA in getting the access it seeks.

Officials from the Foreign, Defense, Unification, and Science and Technology Ministries, the Agency for National Security Planning, and the presidential secretariat held a hastily-arranged morning meeting to discuss imminent moves by the IAEA to call a special board of governors' meeting to deal specifically with North Korea's nuclear problem.

"Problems have emerged in implementing North Korea's safeguards accord with the IAEA, and (IAEA) Director-General Hans Blix is in negotiations with key governor nations on the problem," a Foreign Ministry official said.

The official strongly suggested the possibility of a special board of governors session before the regular session, slated for Feb. 22-26, saying a special session and special inspection "are well within the possible range of action by the IAEA."

The special session may be called since the regular board meeting is restricted in time and has a set agenda to deal with, the official explained.

"The current problems are strictly between North Korea and the IAEA," the ministry official said. "But our position is that Pyongyang is responsible for abiding fully by the safeguards accord."

The meeting noted North Korea's non-compliance with the IAEA and decided to actively support whatever action the IAEA decided to take, he said.

A sixth IAEA inspection team just concluded a two-week visit to the Yongbyon facilities in North Korea, but was denied access to two highly suspicious sites believed to be storage installations for nuclear materials.

An IAEA special inspection, which has never been conducted, requires approval of the involved party.

To demand a special inspection, the IAEA director-general asks the suspect party for an explanation. He opens negotiations with the suspect party on details of a special inspection if the explanation is not enough to allay doubts.

The director-general can take the issue to the board of governors to demand a special inspection if the suspect country refuse to cooperate.

ROK Support Denounced

SK1202031493 Pyongyang Korean Central Broadcasting Network in Korean 0025 GMT 12 Feb 93

[NODONG SINMUN 12 Feb commentary: "An Insidious Attempt of the Treacherous Group"]

[Text] According to a report, the South Korean authorities recently held a so-called working-level counter-planning meeting. They reached a decision to act in concert [chokkuk hounghagi] actively with the International Atomic Energy Agency's plan for a special nuclear inspection [tukpyol sachal] of the North. Such a decision came after they kicked up anti-Republic smear maneuvers in collusion with the United States, babbling about delays in mutual inspections, refusal to comply to some nuclear inspections, concealment of nuclear facilities and nuclear materials. Needless to say, this derives from an insidious aim.

As for the nuclear inspection issue, it is, by nature, an issue which should be solved between us and the International Atomic Energy Agency [IAEA]. It is not an issue in which the South Korean authorities should meddle.

We treasure national dignity and sovereignty more than life. Any unwarranted interference and pressure from outside forces in our domestic affairs will not sway us. It is not just once or twice that we have declared that we

have no nuclear weapons and that we have neither the intention or capability to develop them. We received international inspections pursuant to the Nuclear Safeguard Agreement confidently [tangdanghage] because we have a peaceful and irreproachable [kyolbaek] nuclear policy.

Negotiations between us and the IAEA are being carried out in a normal manner [chongsangjokuro]. The IAEA has further verified through numerous irregular inspections that we have utilized nuclear energy only for peaceful purposes. The problem is that the South Korean authorities have hampered us from implementing the duties pursuant to the Nuclear Nonproliferation Treaty by resuming the Team Spirit nuclear war exercise against us in collusion with the United States under the pretext of our nonexistent nuclear development.

In order for us to sincerely [songsilhage] receive the IAEA's inspection in the future, the circumstances and conditions necessary for this should be provided.

We cannot receive nuclear inspection smoothly [sun-joropke] under conditions in which the United States and the South Korean authorities frantically stage the fire game of nuclear war in South Korea where more than 1,000 nuclear weapons are deployed against the North where no nuclear weapon exist.

South Korean rulers, talking of special inspections and the like while staging a fire game of war harming fellow countrymen with nuclear weapons in collusion with outside forces, are acting like those whose brains are (?abnormal).

The United States and the South Korean authorities should be held responsible for having created obstacles to an international inspection by staging the nuclear war exercise against us.

We have no nuclear facilities that we have not reported and have no hidden nuclear-related materials.

The military facilities that have nothing to do with the nuclear issue cannot be the target of inspection required by the Nuclear Safeguards Accord.

It is the South Korean ruling quarters who have concealed nuclear facilities and weapons and have incited the fever of the nuclear development and nuclear war maneuvers. Fearing that the U.S. nuclear weapons are concealed in an underground depot and that their development of nuclear weapons will be brought to light, the South Korean authorities persistently refused to accept our claim about overall [chonmyon] nuclear inspection at the meetings of the North-South Joint Nuclear Control Committee. Therefore, it is unreasonable for the South Korean authorities to talk about special inspection [tukpyol sachal] of our nuclear facilities based on information and data provided by someone.

Getting the IAEA to open our military facilities and bases because of an impure strategic purpose to disarm us is a crime.

It is clear that by using the North's nonexistent suspicion of nuclear development as a pretext, the South Korean authorities are trying to place the responsibility on us for the nuclear threat on the Korean peninsula; to isolate and stifle us; to prevent the overall inspection [chonmyon sachal] of the U.S. nuclear weapons and bases in South Korea; to leave them in place and maintain the U.S. nuclear forward base; to accelerate the development of their own nuclear weapons; and to ignite the fuse of nuclear war on the Korean peninsula.

However, this is a miscalculation. We will never [chol-taero] tolerate any act that infringes upon our sovereignty and safety. If the United States and the South Korean authorities impose any improper measure on us by using this issue that should be resolved between us and the IAEA for military and political purposes, we will take corresponding self-defensive measures.

The South Korean authorities should completely withdraw U.S. nuclear weapons from South Korea, not constantly spread rumors to the world about the North's nuclear development. They should stop development of their own nuclear weapons and the process of nuclear armament they have begun. They should discontinue [chungji] the Team Spirit nuclear test war.

If they continue to kick up strategic nuclear commotions about us and continue the nuclear war gamble in spite of our repeated warnings, they will be held entirely [chon-jokin] responsible for all consequences arising therefrom.

Pyongyang To Take Countermeasure

SK1302051193 *Pyongyang KCNA in English 0457*
GMT 13 Feb 93

["Futile Fuss, Sinister Intention"—KCNA headline]

[Text] Pyongyang, February 13 (KCNA)—If the United States and some reactionaries take an unreasonable measure for inspection of our military objects which have nothing to do with the nuclear problem, we will take a proper countermeasure for self-defence, warns NODONG SINMUN today.

Recalling that the United States and some other countries recently declared they would carry out "special inspection", if the DPRK refused to accept inspection of "suspicious facilities of nuclear materials," the paper says: It is a new plot to impair the prestige of the DPRK and isolate it and an unpardonable provocation aimed at infringing on and violating its sovereignty and dignity.

The news analyst says:

The allegation that we have "suspicious facilities" related to the nuclear problem is a sheer lie. We have no other nuclear facilities than those we have reported to the International Atomic Energy Agency (IAEA).

The United States and some reactionaries, however, are trying to force inspection on military objects which have nothing to do with the nuclear problem, distorting facts as if the inspection by the IAEA had been suspended

owing to our "refusal." This is an unpardonable provocation of which we cannot but take a serious view.

This is a sinister act to increase pressure on the DPRK and a brigandish demand for the opening of its military objects to the public. In this, they aim at spying on our military facilities legitimately and stifling our socialist position.

The United States tried by hook or by crook to get the military objects and bases of the DPRK opened to the public by manipulating the South Korean authorities, but in vain. Now it is trying to attain its sinister purpose through the IAEA.

The objects alien to nuclear programmes are not liable to inspection by the IAEA. The IAEA has no right to use "information" offered by a third country or anyone's demand in "special inspection" infringing on the sovereignty and interests of a country.

The U.S. demand for inspection of our military facilities is an act infringing on our sovereignty and security.

If we accepted inspection of "suspicious objects" as demanded by the United States, it would be the beginning of the exposure of all our military objects and bases and would become a precedent of permission for the opening of military bases of all non-nuclear states.

Our people have not allowed and will never allow anyone to violate the dignity of the nation and infringe on their sovereignty. We mean what we say. We do not make empty talk.

Asked To Accept Inspections

SK1002001193 Seoul YONHAP in English 2349 GMT 9 Feb 93

[Text] Tokyo, Feb. 10 (YONHAP)—The International Atomic Energy Agency (IAEA) has decided to ask North Korea to accept a special inspection of nuclear processing and storage facilities in an area near Yongbyon, North of Pyongyang, the ASAHI SHIMBUN reported Wednesday.

In a dispatch from Vienna, the mass-circulation daily quoted an IAEA spokesman as saying that an IAEA team asked North Korea for permission to inspect the area when it visited the country earlier but North Korea rejected the request, claiming that they were military facilities.

As a result, the IAEA has decided to conduct a special inspection. Under IAEA regulations, the United Nations specialized agency is empowered to carry out a special inspection of unreported nuclear facilities only if the host country agrees to it.

The IAEA has never conducted a special inspection anywhere before.

The newspaper said the United Nations Security Council may be called upon to discuss the issue since the IAEA has no power to compel any nation to open its nuclear facilities for a special inspection.

Inspections Issue 'Test' of Power

SK1302053093 Seoul THE KOREA HERALD in English 13 Feb 93 p 2

[By staff reporter Kim Hye-won]

[Text] The North Korean nuclear issue has again been brought to international attention as the International Atomic Energy Agency (IAEA) formally demanded that North Korea accept unprecedented "special inspections."

One South Korean official pointed out that the current controversy over the North Korean nuclear program at the IAEA indicates that the issue is no longer a bilateral one between the two Koreas. Nor is it an object of concern among only a handful of Western countries such as the United States and Japan, noted the official.

He said the issue has become so important that it will test the power of the IAEA. It will also measure the will of the new U.S. administration over its commitment to nuclear nonproliferation issues in the world.

The debate over North Korea's nuclear ambition played out for the most part between the two Koreas last year after the Communist country signed a nuclear safeguards accord with the IAEA and accepted the agency's inspections.

South Korea, with the full support of the United States, insists that bilateral inspections are also necessary to verify denuclearization on the Korean peninsula.

But so far the inter-Korean negotiations on bilateral nuclear inspections have produced no substantial outcome hitting a deadlock last month.

"New" U.S. intelligence reports concerning North Korea's plutonium extraction became available around that time.

The IAEA's demand to see the two buildings near Yongbyon was based on that intelligence report, which states that nuclear wastes which could provide critical evidence of plutonium manufacturing are stored in the two buildings.

Suspicion mounted as North Korea refused to allow an IAEA inspection team to visit the sites early this month, claiming that they have nothing to do with nuclear activities.

Instead, it accused the United States, South Korea and the IAEA of trying to spy on military facilities.

Observers in Seoul believe that the IAEA has another important reason to be resolute over the North Korean case. Its reputation is at stake. If it fails to solve the North Korean question, the IAEA, whose credibility was questioned following the Iraqi case, will not be able to effectively investigate other countries with suspicious nuclear programs.

In this sense, the North Korean case is a litmus test of IAEA powers.

The agency plans to call an extraordinary meeting of its board of governors before its regular session Feb. 22-26 if North Korea does not accommodate the request for a special inspection.

Under IAEA regulations, however, special inspections are distinguished from ad-hoc or regular inspections only in that the inspection is implemented on facilities designated by the agency.

The IAEA needs prior consultations with North Korea in order to implement a special inspection, and therefore, there is no way to carry out inspections if North Korea refuses.

All it can do is protest and halt the agency's financial and other supports to the country.

Agency officials were suggesting that they may bring the issue to the U.N. Security Council [UNSC] for this reason. But South Korean officials doubt whether the council can decide on measures to pressure North Korea.

First of all, they say, it is not likely that all UNSC members will act together, as they did in dealing with the Iraq case. Moreover, China is not expected to willingly join the other powers in imposing any form of sanctions against North Korea.

Neither is the United States likely to take immediate actions on its own.

Diplomatic observers in Seoul say such an action will be possible only after President Clinton completes appointment of new officials who will deal with East Asia policy.

In addition, Washington is facing more urgent foreign policy issues such as Somalia, the conflicts in the former Yugoslavia and the Middle East peace talks, they say.

The United States will, therefore, allow the IAEA to deal with the problem for some time, providing indirect support only, the observers forecast.

Russian Lack of Support Noted

SK1302063993 Seoul CHOSON ILBO in Korean 13 Feb 93 p 2

[Text] THE WALL STREET JOURNAL reported from Moscow on 12 February that Valeriy Yermolov, director of Korean affairs in the Russian Foreign Ministry, said: "If North Korea refuses to compromise with the International Atomic Energy Agency [IAEA], the issue of nuclear inspection will be referred to the UN Security Council. This will result in international sanctions against North Korea."

Director Yermolov's remarks appear to hint that if North Korea's nuclear issue is presented to the UN Security Council, Russia has no intention of supporting North Korea.

In the talks held in Pyongyang to revise the Russia-North Korea military alliance treaty, Russia urged North Korea to accept IAEA inspection of disputed buildings, but

North Korea refused. As a result, Russia-North Korea relations are likely to worsen, THE WALL STREET JOURNAL reports.

Russia is asking North Korea to repay its \$4 billion debt. North Korea proposed that it repay the debt by reexporting to Russia Japanese-made semiconductors imported through the General Association of Korean Residents in Japan.

The JOURNAL also reports that although conservative forces, including its parliament, oppose the Yeltsin government's policy on Iraqi or former Yugoslav areas, almost no political force opposes the cooling-off of Russia-North Korea relations. Since Russia demanded that North Korea pay for its imports in hard currency, the import of crude oil has drastically decreased from 800,000 tons, peak quantity during the previous years, to 25,000 tons in 1992. The trade volume fell from \$1.5 billion three years ago to \$600 million in 1992, THE WALL STREET JOURNAL reported.

China Asked to Persuade Pyongyang

SK2402095393 Seoul KYONGHYANG SINMUN in Korean 24 Feb 93 p 1

[Text] North Korea officially rejected a special inspection by the International Atomic Energy Agency [IAEA]. Predicting that the IAEA will conduct a special inspection of North Korea's nuclear facilities anyway, the ROK Government officially asked the PRC to use its influence with North Korea.

The government invited PRC Ambassador Zhang Tingyan to the Foreign Ministry on 23 February, asking that the PRC persuade North Korea to accept North-South mutual nuclear inspection.

Chong Tae-ik, director-general of the Foreign Ministry's American Affairs Bureau, said in a meeting with Ambassador Zhang: "If North Korea continues to refuse a special inspection by the IAEA, North Korea's nuclear issue will surely be referred to the UN." Chong asked the PRC to join in international pressure, also asking the PRC not to use its veto if North Korea's nuclear issue is referred to the UN.

Following this request to the PRC, the government plans to invite Russian Ambassador Panov to the Foreign Ministry to ask for Russia's cooperation in influencing North Korea. The government also plans to ask some leading countries' ambassadors to ROK, including the United States and Japan, for similar cooperation.

IAEA Reportedly Finds Unreported Plutonium

SK2402103793 Seoul KBS-1 Radio Network in Korean 1010 GMT 24 Feb 93

[Text] In a report filed from Vienna, Japan's NIHON KEIZAI SHIMBUN quoted an International Atomic Energy Agency [IAEA] official as saying that the IAEA found plutonium from North Korea's nuclear waste, which is completely different from what North Korea had reported to the IAEA.

The newspaper added that finding the new plutonium proves that, contrary to North Korea's report to the IAEA, North Korea had extracted plutonium many times and kept some of it in hiding or had already built secret nuclear waste processing facilities.

This official also said that satellite data shows that the facilities North Korea insists are not necessary to inspect, claiming that they are mere military facilities, are nuclear facilities, and it is indeed necessary to inspect them.

POLAND

Border Radiation-Detection Equipment Discussed

93WP0083A Warsaw ZYCIE GOSPODARCZE
(ENVIRONMENT AND LIFE supplement) in Polish
No 4, 24 Jan 93 pp 13, 15

[Article by Krystyna Panek: "Radioactive Contraband"]

[Text] Major Robert Turp, a licensed British gun dealer, received an offer from Norman Derbyshire, another British man who lives permanently near the Dutch-German border, to transfer from Russia to Iraq 80 kg of plutonium. Both gentlemen had earlier sold guns to Biafra together and recently sold parts of Russian tanks. This time, however, the transaction was illegal.

Turp, after contacting special services, involved journalists in the case. He wanted to not only destroy the plans of the suppliers, but also to use the case for propaganda purposes. Barrie Penrose and Conagh Blackman learned all of the details of the smuggling operation and revealed them in The Sunday Express.

The most important part of the action took place in Varna, a Bulgarian spa that recently became a very convenient transfer port for radioactive contraband from Odessa to the Middle East. Derbyshire's agent, Swedish businessman Gosta Hartman, was unable to be present at the arranged meeting because he had a car accident in Krakow and had to stay in the hospital for two days. He had two assistants, Edward R. and Marek S., Poles who live permanently in Sweden. They had to deliver to the Iraqi Consulate in Varna not 80 kg, but, as it finally turned out, 200 kg of plutonium 239. The supply was to be transferred from a farm near Sofia.

Bulgarians did not want to hand over the tainted product before getting paid. Negotiations were delayed. A sample delivered to the Sheraton Hotel was taken by the Bulgarian security agency. In a strange turn of events, the main participants of the event were able to escape. After his return to Stockholm, Hartman sent Turp a fax with a proposal to meet in Geneva to close the contract and an offer to deliver the goods as soon as the necessary cash is collected.

The Western newspapers are full of reports of attempted smuggling of radioactive materials. Many of those materials are smuggled through Poland. In this procedure, our countrymen are often active participants. Recently, 1.5 kg of uranium was found in a plastic bag in the house of Andrzej P. of Terespol. Five smugglers of cesium and strontium fell into a trap organized in Frankfurt; among them were two Poles. Two other Poles, who delivered earlier samples for analysis in Switzerland, were radiated to death. Among 12 persons recently arrested in Udmurtia (a republic in the European part of the Russian Federation) while trying to smuggle 100 kg of uranium were three Poles.

During the past few months, the German police have conducted about 100 investigations of cases of radioactive contraband; in all of 1991, there were only 30 such

cases. News agencies from Austria, Switzerland, Italy, Hungary, Poland, Czechoslovakia, and Romania have reported arrests of smugglers of radioactive materials. Such statistics are certainly a result of the attention focused on this particular issue, but it also says something about an increase of such crimes.

Nuclear Mafia?

Asked whether we are dealing with a nuclear mafia, the experts' answer is: not yet. These actions do not indicate uniform supervision and armed security guards. Attempts to smuggle isotopes, which are not in demand, at the risk of lives are proof that it is not organized crime. Smugglers believe that everything that makes the Geiger counter jump must be in great demand. But only isotopes needed to produce a nuclear bomb are sought.

Supply increases only when there is demand for a product. Countries of the Middle East that do not have a chance to buy radioactive materials legally are interested in those products. Officially, only the United States, Great Britain, France, China, and states of the former USSR own nuclear weapons. It is suspected that such weapons are also possessed by India, Pakistan, Israel, and South Africa. Experts assume that countries like Germany, Switzerland, Japan and Taiwan, which possess highly developed technologies, would be able to produce a nuclear bomb in a dozen or so months. Among countries that would like to join the club of owners of nuclear warheads are Iraq, Iran, Syria, Algeria, both Koreas, Argentina, and Brazil. At least it seems so because the UN has information that Saddam Husayn has all of the data and components necessary to produce a nuclear bomb.

Besides the Middle East countries, all sorts of terrorist groups are potential buyers of radioactive materials. In their hands, isotopes can be used not necessarily to produce weapons but to force officials to make favorable decisions by threatening direct radiation of people or the pollution of water or food supplies, for example.

Demand for illegal supplies of radioactive materials has existed for a long time, but only with the collapse of the Soviet Union did the supply on the black market increase alarmingly. A lack of control of radioisotopes can threaten world peace and security. It is not surprising, then, that the German minister of foreign affairs addressed a request to Eastern countries for tighter border control. In Poland, Prime Minister Hanna Suchocka formed an interdepartmental team to investigate the state of radiation security in our country. According to Wojciech Swiatek, of the State Environmental Protection Inspectorate, it is very important to control things where they start, which means that supervision over the distribution of radioactive substances is necessary in order to eliminate the possibility of acquiring such materials illegally. The catastrophic economic situation of the countries formed on the ruins of the Soviet Union means that those desperate people are ready to trade everything. Corruption of officials and Army officers is the reason this particular area is the

biggest supplier for the black market. Worse, companies that offer nuclear services entirely legally, like CZETEK and MENEP, have emerged out of the wave of initiative in the CIS [Commonwealth of Independent States] and help in contacting Russian atomic experts.

What Is Hidden in the Barracks?

Can Poland be a source of illegal export of isotopes? Despite calming statements from nuclear security services, I think yes. Until now, full information on the storage of nuclear weapons in former Russian bases has not been obtainable. But only two Russian Army bases have been investigated in order to check radiation levels. Director Stanislaw Latek, of the National Atomic Energy Agency, believes that a request for such measurements must come from local officials, which have not shown much interest. The example of the two farmers who bought two containers of cesium from Russian soldiers from the Soviet base at Borne-Sulinowo should force new users of the bases and those who supervise the departure of the Russian army to be on increased alert. The airport in Legnica, which the Russians use and over which our police have practically no control, is a potential transfer place for any kind of contraband.

In our country, various isotopes are used for medical, scientific, and industrial purposes. Our nuclear energy control service believes that those sources of radiation are recorded and under strict supervision. It excludes the possibility that the disappearance of nuclear materials could be concealed. But it does not eliminate the possibility of theft, of course. Such things do happen, and the stolen isotopes cannot always be recovered.

From a report on supervision and control in the area of nuclear safety and radiation security, published in 1992, we find out that, in 1991, 11 containers of isotope preparations disappeared from a Polatom truck; a container of cobalt 60 from the Nowiny Cement-Lime Plant was stolen; and one of six neutralizers, containing plutonium 239, was lost during the liquidation of the Knitwear Industry Plant in Lodz.

It is also unknown where the transport to the Ostrowiec steel mill, containing scrap contaminated with cesium, came from. It could just as easily come from contraband as from a local source. The cesium did not get into the melting stage because it evaporated at 400 degrees Celsius and got into the dust. It was discovered because cesium blocked the isotope dust transmitters. Today, it is not causing problems, but the fact that such an accident took place at all is not a good example of our nuclear security.

If the isotopes get into the wrong hands, the next place that enables us to stop uncontrolled transit is the border. Border guards are trained to take dosimetric measurements, and the border points have special portable devices. But controlling every car with this system is impossible; it takes a long time and would completely block the border roads. In practice, only suspicious transports are investigated. The only means of border control that works is the placement of special gates to

measure the radiation of every passing vehicle and signal every violation of the permitted level automatically. The problem is that such devices are very expensive and, according to the division of duties and responsibilities, should be purchased from voivodeship funds.

I do not recall any cases where local officials have asked for subsidies for this purpose from the foreign funds designated for assistance in construction of border checkpoints and the modernization of custom procedures. They tried to convince me that radiometric gates should be placed on the entrance side; in such a case, we could not count on any donation because the sponsor would not get any advantages from such control and, worse, such a setup might even cause problems.

A Dam for Nuclear Waste

For us, the smuggle of radioactive materials is not only export to the West. An equally great threat is the import of raw materials and the illegal import of waste that contains radioactive elements. Appeals from the West to stop the uranium contraband and increase border alert are not linked to better control of radioactive contraband from West to East. After limiting the possibilities of storage of "glowing waste" in developing countries and in the former East Germany, we became the most convenient, closest storage place.

It is true that our country has a law prohibiting the import of nuclear waste, but there is always the possibility that some companies will import radioactive waste, under cover of import of some raw materials. It is worth it to pay the buyers in Poland generously because the costs of utilization of nuclear waste are much higher in the exporters' homeland. The threat will probably increase after the implementation of a liberalized bill on the import of wastes, which provides the opportunity for legal import of nuclear waste after obtaining the permission of the general inspector for environment protection. The only way to prevent the smuggle of radioactive materials across borders is the permanent automatic control of all transports.

The first devices to measure radiation of vehicles were installed free by the producers—the French firm Nardex and Polon-Zelmech from Zielona Gora in Poland. The border guards say with satisfaction that the Polish UK-1 device passed the test better in normal use conditions. It turned out to be more sensitive and efficient. It was able to control well even vehicles that moved at higher speeds. It is also easier to conduct checkups and repairs.

Already, in the first few months of the use of radiometric gates, several dozen radioactive transports were discovered. They included ores, zirconium silicate, argilla, bricks, chamotte dust, sodium hydroxide, and sodium carbonate. The border guards also observed that some transport vehicles that had earlier crossed the border regularly simply disappeared after installation of the gates. This was the case for technical plaster, for example, offered to Polish buyers at the attractive price of two German marks per ton. Maybe the exporter chose

another, uncontrolled point to cross the border? Until similar gates are installed at all checkpoints, there is no way to improve the security of our borders.

We have 23 road checkpoints, 27 railroad checkpoints, four sea checkpoints, and five air checkpoints in our country. So far, besides the Swieck checkpoint, automatic radiation-detection devices have been installed in

Olszyna and Zgorzelec. Soon more gates will be working in Gubin and Dorohusk and five other towns (see chart [not reproduced here]). Polon-Zamech can produce 50 such machines a year. The rate of installation depends on funds that the border voivodships will be able to assign for such investments. The price of one gate is approximately 200 million zlotys.

INDIA

Former AEC Head Interviewed on Nuclear Policy
93WP0077A Madras *THE HINDU* in English 30 Dec 92 p 8

[Article: "A Plea Against Signing NPT [Non-Proliferation Treaty]"]

[Text] India has adopted a distinctive, though somewhat undefinable, political profile in the domain of policy over the question of producing nuclear weapons as and when necessary. The tricky diplomatic arena covers a wide spectrum of issues ranging from the so-called nuclear option to the renewal of the nuclear Non-Proliferation Treaty [NPT] in 1995.

Dr. M. R. Srinivasan, a technocrat who served as Chairman of the Atomic Energy Commission during the period of Rajiv Gandhi's premiership, asserts, in an interview to P. S. Suryanarayana, that "India's security cannot be achieved by giving up its nuclear weapon capability." Excerpts from the interview:

Question: India has come under international pressure to sign the Nuclear Non-Proliferation Treaty. Do you think India has any real options at this stage?

Dr. M. R. Srinivasan: The reasons why we didn't sign the NPT earlier remain as valid as they were in the past. In the last one year or so, the number of countries which possess nuclear weapons has (also) increased. Nuclear weapons are available not only with Russia but also with Ukraine, Belorussia and Kazakhstan. In addition, there are high technology and sensitive facilities in some of the other Central Asian States.

Now, these are all areas of considerable instability. We can't be sure that even complete nuclear weapons or other crucial ingredients required for nuclear weapons might not leak out of these States. So, it is clearly not at all opportune for India to consider signing the Non-Proliferation Treaty.

Of course, India has all along stood for nuclear non-proliferation. (However) we know for a fact that they (the U.S.) do not foresee a date when nuclear weapons will be out of the picture altogether. So, in that scenario, it's clear that we have to maintain our nuclear capability. But it is not suggested that we need to increase nuclear tension by any overt conversion of the capability to actual operationalised nuclear weaponry.

Q: You seem to say that Delhi can only tell the Western powers that India will maintain good behaviour by not producing the weapons, unless absolutely essential...

Yes, certainly. India's security cannot be achieved by giving up its nuclear weapon capability. It's clear that, from 1974 onwards till now, we haven't actually done much to convert the capability to actual weaponry. But, at the same time, we know that Pakistan has got some nuclear weapons.

Q: In this context, there were reports, recently, to the effect that India might consider agreeing to fullscope

safeguards in respect of its future nuclear power establishments. Do you have any intelligence on that?

I see no reason why India should take this position. It's of course clear that our installations for producing power are meant for civilian applications. But this cosmetic gesture of placing them under international safeguards is really an unwarranted step.

I certainly do not think that there is any such serious move on the part of the (Indian) Government. I think these are inspired reports.

Q: Why do you call it a cosmetic gesture?

All the inspection activities of the IAEA (International Atomic Energy Agency) are... meant to ensure that peaceful installations are not diverted for non-peaceful purposes. (But) we know, as a matter of history of nuclear weapon development, that not a single nuclear weapon has actually been made as a result of diversion. If you bar the early dual-purpose reactors... civilian power reactor installations, in fact, are not considered the ideal ways of making nuclear weapons. In that sense, it is cosmetic.

Q: If atomic power generation is not the indicated natural route towards nuclear weapons production, why should the U.S. and the others be so keen that India must sign on the dotted line in the NPT?

I think these are just old habits. The Western powers would certainly like to see a world where the potential power centres are as few as they can get away with. This is one of those areas where their interests and our interests do not coincide.

Q: Do we really have the capacity to make the quantum leap to the defence side of the nuclear question?

A certain media impression has been given, for example, equating the capability that India has with that of Pakistan. There is no question that India's capability is substantially more than that of Pakistan. Both in quantitative and qualitative terms. I think we must maintain this technology lead.

Q: Moving over to the other concern which worries India, namely the Chinese nuclear arsenal, what could Delhi do to convince the West that India's apprehensions about China must be given precedence over all other considerations?

Firstly, of course, one welcome development is that the tensions between India and China, on a State-to-State level, are coming down. But there is no predictability in some of these (international) situations.

(Moreover) in the past, the Chinese have worked closely with Pakistan and, in the process, caused considerable problems for India. The reported sale of missiles from China... the Chinese help to Pakistan in Pakistan's quest for nuclear weapons. These are live issues. We have a legitimate concern in not continuing the asymmetry beyond a certain tolerable level.

Q: Do you think that China could give a credible guarantee that its nuclear weaponry is not directed against India, as some U.S. officials seem to presume?

At the bottom line, there is really no such cast-iron guarantee that anybody can accept.

Q: Could you, then, think of any modified version of NPT which might be acceptable to India? In the context of the NPT review conference due in 1995...

The review conference in 1995, really, has one objective—to give NPT an extended lease of life. Unquestionably, the treaty is discriminatory: The weapons-powers are continuing to keep the weapons without any time-frame of eliminating them. The nuclear non-weapon-powers, also, are continuing to accept this state of affairs.

Clearly, India could accept a regime of eliminating all nuclear weapons. As a realist (though), I don't see this happening. I really cannot see what kind of tinkering with the NPT is possible. Because, once we say that some countries will keep some residual nuclear weaponry, till that time, I believe India also, will have to keep its nuclear weapon-making capability.

Q: Overall, would you say that India should stand up to international pressure and try to indigenise its own production lines in the field of nuclear power and face any kind of external economic or other sanctions which might come in the way...

Absolutely. There is no doubt whatsoever in my mind.

Q: As for a more specific question, regarding the Tarapur nuclear power plant, what is your update on the report that France is not inclined to extend the agreement to supply fuel beyond 1993?

It is a situation that has arisen as a result of France having signed the NPT. So far as India is concerned... we can run Tarapur on the basis of fuel that is composed of a mixture of plutonium oxide and natural uranium oxide. There is capability for reprocessing spent fuel and extracting plutonium from it and making mixed oxide fuel.

There is a lot of plutonium in the spent fuel from Tarapur itself and also some amount of unburnt enriched uranium... Now, after 1993 when the cooperation agreement ends, we would be perfectly free to reprocess the Tarapur spent fuel. It seems to me we have a large amount of plutonium available from that source which can be used in Tarapur as fuel.

Q: Won't the Western powers suspect that this large amount of plutonium could be diverted?

Well, such a suspicion can be there. But you have to look at the situation in the context of (the) plutonium available with at least some of the more important countries. If the world can accept that these countries can have large amounts of plutonium... and the world is at peace,

I see no reason why India cannot have a certain amount of plutonium. After all, India, also, has been a responsible country.

Papers Report Development of Rocket Engines

Liquid Engine Stages Complete

93WP0074A Madras *THE HINDU* in English 30 Dec 92 p 17

[Article by N. Gopal Raj in Thiruvananthapuram: "Liquid Fuel PSLV [polar satellite launch vehicle] Engines Set for Launch"]

[Text] The Indian Space Research Organisation's [ISRO] Liquid Propulsion System Centre has completed the two liquid engine stages needed for the polar satellite launch vehicle (PSLV). This is seen as a vital step towards achieving indigenous capability of manufacturing liquid engines.

India's previous two launch vehicles, the satellite launch SLV-3 in the early Eighties and the augmented satellite launch vehicle (ASLV) launched in May this year, both used only solid propellants. The PSLV is scheduled for launch about mid-1993 and can put a one tonne class Indian remote sensing (IRS) satellite into a 900 km polar orbit. It will be the first Indian launch vehicle which will use liquid engines for the core stages. Liquid engines are more efficient than solid motors, as they give greater thrust for the same weight of propellant consumed. But they are also more complex.

The PSLV second stage is powered by the Vikas engine derived from the French Viking engine. ISRO acquired the technology when its engineers worked with the French on the Viking engine project in the mid-Seventies. The Liquid Propulsion Systems Centre (LPSC) has transferred the technology for the manufacture of Vikas to two private companies. One of them, Machine Tools and Reconditioners in Hyderabad, delivered the first engine to ISRO earlier this month. The other company, Godrej and Boyce, is expected to deliver soon.

The fourth stage, which was recently handed over by LPSC to the PSLV project team, has two indigenous liquid engines, each producing about 750 kg of thrust. Since it is the terminal stage, the fourth stage has to follow the predetermined flight path accurately enough to place the IRS satellite into orbit with a variation of less than 15 km in altitude and 0.1 degree in orbital inclination.

After the third stage burns out and separates, the fourth stage and its payload will coast along for about 273 seconds when the fourth stage reaction control system will maintain orientation on all three axes. Then, the two fourth stage engines will ignite at an altitude of 770 km. The fourth stage will be shut off after it attains an injection velocity of 7.4 km/second and is 908 km high. The two engines can be swivelled in two planes to control orientation along the three axes.

The engines are regeneratively cooled: one of the propellants is passed through channels around the throat and combustion chamber to cool. Regenerative cooling has proved tricky. At one stage the LPSC tested a similar engine with an ablative lining in the combustion chamber. The engines use a contour nozzle made of columbium alloy and with a silicide coating for thermal protection. The engines can be stopped and restarted. Two such engines are used for roll control of the first stage.

The fourth stage engines use monomethyl hydrazine (MMH) for fuel and mixed oxides of nitrogen (MON) as oxidiser. Helium gas under high pressure drives the propellants into the combustion chamber with the required pressure. As the engines have to operate under very low gravity, when the propellant can drift away from the outlet, the tanks have special propellant acquisition devices.

After the delivery of the fourth stage at the Mahendragiri liquid engine test facility in Tamil Nadu on December 21, the fourth stage was taken to Valiamala (near Thiruvananthapuram) where the PSLV project team is based. After the guidance and other avionics are fitted and tested, the fourth stage will be transported to Sriharikota where it will be integrated with the rest of the launch vehicle.

All tests have been completed on the PSLV second stage which houses the Vikas engine. The flight version is expected to be ready by February when it will be taken by road directly to Sriharikota.

Details on Rocket Motor

93WP0074B Madras THE HINDU in English 22 Dec 92 p 4

[Text] Bangalore, Dec. 21—The flight unit of the fourth stage of the Polar Satellite Launch Vehicle [PSLV] has been successfully tested by the Liquid Propulsion Systems Centre at Mahendragiri. It has been delivered to the project people for integration with the flight vehicle.

The high performance engine which uses two tonnes of liquid propellants to develop a thrust of 700 kg is totally indigenous. It has gone through a cumulative firing of more than 7,500 seconds on the ground and in a vacuum for 425 seconds.

The separation of the first and second stages of the PSLV was tested successfully last week at the Vikram Sarabhai Space Centre [VSSC], Thiruvananthapuram. The separation is achieved using flexible linear shaped charges by pyro-circuits control and remote controlled safe/arm units. This test is significant because the second stage nozzle has to get clear of the first stage without collision. This has been successfully demonstrated a number of times.

The third stage of the PSLV motor was test-fired in the flight configuration with flex nozzle control at Sriharikota on December 18. This test is the ninth and last of the series of qualification tests. The rocket motor is

two metres diameter and made of polyaramid fibre embedded in epoxy resin. It uses 7.25 tonnes of solid propellant burning for 80 seconds and producing a maximum thrust of 33 tonnes. It propels the PSLV upper stage and the satellite from an altitude 230 km to about 410 km, imparting an additional velocity of 2.1 km per second. It is one of the largest upper stage motors in the world.

With these successful tests, all the propulsion stages of the PSLV are fully qualified. The preparation of various interstage sub-assemblies and avionic systems are in progress at the VSSC. Work on the solid motors, namely, the first and the third stage of the PSLV has begun at Sriharikota.

MTCR 'Imposition' Decried

BK0902122793 Delhi All India Radio General Overseas Service in English 1010 GMT 9 Feb 93

[Commentary by journalist Gian Singh]

[Text] When Prithvi [Earth], India's own medium range surface-to-surface missile, was once again successfully test fired on Sunday from the Chandipur on sea interim test range in Orissa, it is more than one step forward in the country's 8 billion-rupee integrated guided missile development program. It is reaffirmation of India's resolve to achieve self-reliance in this crucial area in the frontiers of sophisticated multidiscipline technology for, it is a fact of life that imposition of the informal Missile Technology Control Regime [MTCR] by the most advanced countries has put clamps in the rapid growth outside the leading space club members, especially on the developing ones. An example is the difficulty that India has been facing in procuring cryogenic engines from the Russian space agency, Glavkosmos, contracted in early 1991. The U.S. pressure is believed to be the impediment which President Yeltsin had during his recent Indian visit promised once again to resist.

Prithvi, now under production at the public sector Bharat Dynamics Limited, Hyderabad, is a modified version of the indigenous Satellite Launch Vehicle—SLV-3. It is a liquid propellant based quick reaction missile designed to deploy command structures as well as disorient formations of tanks in war. It has two versions. One, SS-150 with a range between 40 and 150 km up to 1,000 kgs. Two, SS-250 with a maximum range of 250 kms has a warhead up to 500 kgs. Developed by Defense Research and Development Department—DRDO—under the leadership of India's rocketry wizard A.P.J. Abdul Kalam, Sunday was Prithvi's fourth test firing from the interim test range and 10th in the series. The first test was conducted on 22 February 1988 from the Rocket Launching Center at Sriharikota in Andhra Pradesh and the last launch was carried out on 29 August last year from Chandipur on the sea. There will be more tests before the missile is cleared for operational deployment. Prithvi is one of the five missiles under various stages of development and almost all its components having been made in the country.

India's capability in the overall rocket technology received a boost in the last decade after the first successful launch of SLV-3 in 1981 with its range of 300 kms and payload of 40 kgs. In spite of the lack of international cooperation, India has already developed key elements in the technology. Included in the achievements is the indigenous development of space grade heat shield material required to protect the rocket from high temperatures. Solid boosters used for giving the rocket initial thrust have also been made in the country. But, they are comparatively heavy. Liquid fuel thrusters burn more efficiently and also enable manoeuvrability. These were initially (word indistinct) from the French, but have also since been indigenized. Similarly, autopilot for precision guidance has also been partially developed and so have the straps on systems which give greater thrust on the first stage.

Initial launches of Prithvi were from a pad separated from the control center, but the last three firings, including Sunday's, were from a mobile launcher, improved version of a Belgian truck manufactured under license at Bharat Earth Movers, Bangalore. The onboard computer systems of a missile's specialized devices like accelerometers and gyroscope to keep it on course to the predetermined target have also been developed in India. However, what Prithvi does not have at present is the mechanism to guide it at the end of the journey and has a circular error probability of about 100 meters. When produced for operational use, Prithvi will cost around 18 million rupees each which is profitable to the price of a similar class missile available abroad.

The Defense Ministry proposes to invest over 2 billion rupees to set up large production facilities at the Hyderabad factory. Simultaneous with Prithvi, the production of another quick reaction surface-to-surface missile Trishul [Trident] will also begin. While Prithvi is mainly for deployment by the Army as a tactical and strategic weapon, Trishul will be used by all the three wings of the armed forces. After these missiles are integrated into the defense setup, it is estimated that it will take less than two minutes to fire one after another.

Launched in 1983, the integrated missile development program involves 21 laboratories of DRDO, 10 universities, and Indian Institutes of Technology. The earnestness and dynamism with which this program is being conducted reflect India's determination to live up to its defense commitments—sanctions or no sanctions. China and Pakistan have already deployed missiles of this class. Hence the critical importance of Prithvi.

Country Said Ready To Enter Space Market

93WP0075A Bombay THE TIMES OF INDIA in English 22 Dec 92 p 15

[Text] The Times of India News Service, Hyderabad, December 21—India is all set to pick up a share of the international space market which is currently on a scale of about \$5 billion a year, according to Prof. U. R. Rao, chairman of the Space Commission. This opens up

enormous opportunities for Indian industries which have been working with the Indian Space Research Organisation (ISRO).

India has supplied some propellants, sensors, components and satellite systems to countries such as Brazil and Canada. Today India is in a position to produce just about everything needed for satellites: systems have been completely indigenised and the process is on in the case of components.

He felt that India could enter world market for satellite systems for areas like disaster warning and ocean remote sensing.

Besides public sector undertakings like Mishra Dhatu Nigam (Midhani) which specialises in alloys, a number of private industries have been working with ISRO and have been recipients of technology transfer from ISRO.

Machine Tool Aids and Reconditioning (MTAR), a unit near Hyderabad, has graduated from supplying components to production of Vikas, the Indian version of the Viking engine used in satellite launchers. MTAR and Godrej were simultaneously assigned projects for producing Vikas, India's largest liquid propellant engine which has to use about a quarter tonne of liquid fuel for about 150 seconds and have both produced engines which would compare with the best, notes Dr. Rao. Andhra Sugars is producing another type of liquid propellant for ISRO.

The next significant stage would be India's entry to the field of cryogenic engines which operate at very low temperatures (below -200 degrees C) with liquid oxygen and liquid hydrogen. Many metals would become brittle at such temperatures. Russia is modifying an engine it had developed for India for use in GSLV launches scheduled to begin in 1995.

The agreement with Russia is for transfer of technology and supply of hardware in two integrated stages with the third stage to be produced in India with that technology.

The Vikas engine produced at Hyderabad costs about Rs 2.2 crores, with material costing about Rs 0.5 crores and machining accounting for Rs 1.7 crores. Such high requirements of highly-skilled manpower give India a competitive advantage in international market. While India had paid \$75 million for INSAT 1-D, the cost of INSAT-2, a home product of ISRO, worked out to about Rs 75 crores, according to Prof. Rao.

India is trying to join some international consortium for realising its market potential. Talks are on with some organisations like MATRA.

IRAN

North Korean Scud-C Missiles Delivered

TA0902184093 Jerusalem Israel Television Network in Arabic 1730 GMT 9 Feb 93

[Text] Iran recently took delivery of some Scud-C surface-to-surface missiles with a range of about 500 km, as

well as a number of launching pads, in accordance with a deal signed by the Iranian authorities with North Korea. Citing a high-ranking military source, our military affairs correspondent Dani Levi adds that these missiles are in addition to about 250 Scud-B missiles supplied to Iran before the Gulf war.

Iranian Diplomats on Nuclear Warhead Purchases
93WP0071A Tel Aviv YEDI'OT AHARONOT
(Weekend Supplement) in Hebrew 15 Jan 93 pp 12-13

[Article by Shlomo Papirblatt: "The Fellows Bought Four Warheads"]

[Text] "So, are your pilots already training for the bombing of the nuclear center in Esfahan. I hope that when it happens, the reactions in the world will be less severe than they were following the bombing of the Iraqi reactor. The fact is that, ultimately, everyone will reach the conclusion that you were right."

These words, from an experienced French commentator, an expert on international military affairs, were spoken to me this week during the course of a background conversation about Iran's efforts to attain military nuclear capability. A short time prior to that, I had placed on his desk, in an office overlooking the Rue de Rivoli, not far from the Tuileries Gardens, an unusual document that had reached YEDI'OT AHARONOT: proof that Tehran had, indeed, purchased nuclear warheads from one of the Islamic republics of the former Soviet Union, and conclusive confirmation of the various forms of conjecture and fear that had appeared in the West.

Several months ago, the American columnists Evans and Novak wrote that "there are signs" that Iran is currently increasing its efforts to purchase nuclear weapons, and that it had signed such a transaction with Kazakhstan. They noted that the source of this information was Mohammad [?Muharsein], an exiled Iranian leader and sharp critic of the current regime.

[?Muharsein] also had information reporting that Iran intends to install these warheads on Silkworm missiles in its possession. These missiles were previously purchased from China, and are intended mainly for naval assaults, but they can be used against ground objectives as well. It should be noted that at the same time, the Iranians are working on the development and improved range of the other missiles in their possession, so that they can attain a range endangering the State of Israel.

Tehran, of course, rejected this information. Its spokesmen claimed that, as usual, this alludes to propaganda spread by its opponents in order to turn international public opinion against it.

Recently, however, we received a recording of a telephone conversation—the work of a European security service—which took place between two Iranian diplomats, one stationed in Geneva and the other in the foreign ministry in Tehran. Such conversations are held

(and recorded...) by the hundreds every day. The overwhelming majority of them do not contain any information of interest, because the experienced speakers are careful not to expose information. But as any organization dealing in field security knows, ultimately there is always a conversation that "slips"—and information is revealed.

One still recalls the telephone conversation between Yasir 'Arafat and his representative in Paris, Ibrahim Sus, which received international publicity. Parts of it, exposed by CNN, included sharp anti-Semitic expressions, thereby creating a furor.

The telephone conversation, published here for the first time, took place at the beginning of last December. On the Iranian side of the line, the speaker is 'Abdol Rahmani, the person at the foreign ministry in charge of relations with the republics in Central Asia, formerly part of the Soviet Union. Tabataba'i Kia, number two in the Iranian delegation to the United Nations and international organizations in Geneva, sat in the office in Switzerland. His official title is deputy to Cyrus Nasri, the head of the delegation.

The recording of the conversation, which YEDI'OT AHARONOT possesses in its entirety, is set forth here with slight abbreviations, which are insignificant in terms of the main issue.

[Kia] Hello, good morning.

[?Abdol Rahmani] Good morning.

[Tabataba'i Kia] How are you?

[?Abdol Rahmani] Okay, thanks.

[Tabataba'i Kia] Mr. 'Abdol Rahmani?

[?Abdol Rahmani] Yes.

[Tabataba'i Kia] How are you?

[?Abdol Rahmani] With whom do I have the honor...?

[Tabataba'i Kia] Kia...Tabataba'i.

[?Abdol Rahmani] Ah! How are you? Excuse me for not recognizing your voice...

[Tabataba'i Kia] Listen, 'Abdol Rahmani, my dear, we received something here. A report about Nakhichevan and the area, a topic that you are apparently very familiar with.

[?Abdol Rahmani] Not really...

[Tabataba'i Kia] Yes, listen, we have done certain work here regarding Kazakhstan. I worked on it and I had several meetings here, the results of which I will send you by telex. I only ask of you that if you have an answer about it, you transmit it to me as soon as possible.

[?Abdol Rahmani] When are you sending me the telex?

[Tabataba'i Kia] I will try to do it this afternoon, local time, so it will be on your desk tomorrow morning.

[Abdol Rahmani] Okay. But may I ask you to send me the material by fax?

[Tabataba'i Kia] Why not?

[Abdol Rahmani] I will give you a number, are you writing it down...? 59 43 75.

[Tabataba'i Kia] Ahhh...Our communications department had that number, but it was always busy. Now I understand.

[Abdol Rahmani] Okay, write this down, I will give you a new number, which is always available for you...76 22 48.

[Tabataba'i Kia] You know, the issue created a big fuss here (in the West).

[Abdol Rahmani] What issue?

[Tabataba'i Kia] You know, the guys who wanted to buy a few warheads.

[Abdol Rahmani] (Laughing loudly) Yes, yes, it created a big fuss.

[Tabataba'i Kia] Yes, it was on the front pages, but things have calmed down now. I am very happy. From what I understood then, the fellows completed their task in the best manner possible.

[Abdol Rahmani] Yes, yes.

[Tabataba'i Kia] Exactly how many did they purchase, 'Abdul Rahamani, my dear?

[Abdol Rahmani] Four.

[Tabataba'i Kia] Yes, that is what I was told. Have they already arrived?

[Abdol Rahmani] Not yet.

[Tabataba'i Kia] Ahhh...so...why is that?

[Abdol Rahmani] I do not know. It got stuck.

[Tabataba'i Kia] What do you mean? It got stuck on the way out or upon arrival in Iran? Or are there other problems?

[Abdol Rahmani] Yes, it is about the transport. There is a technical problem.

[Tabataba'i Kia] But have we already paid everything?

[Abdol Rahmani] Yes.

[Tabataba'i Kia] How much did it cost us?

[Abdol Rahmani] I do not know. Another one of the fellows arranged the matter of payment.

[Tabataba'i Kia] I wish to ask you something... Who was the contact person for the purpose of this matter? Was it one of our people, or someone...how should I put it...you know, the fellows who Haji Mohsen Rafiq [President Rafsanjani's brother-in-law and among the leaders of the hawks in Iran, leader of the "desperate"—those espousing an extremist and isolationist policy] used to work with.

[Abdol Rahmani] Yes, one of them went to do it.

[Tabataba'i Kia] One of Torkan's [the Iranian minister of defense] people?

[Abdol Rahmani] Yes.

[Tabataba'i Kia] Someone that I know?

[Abdol Rahmani] I do not think so... I do not know him at all.

[Tabataba'i Kia] Ahhh. It is lucky that things turned out all right, anyway.

[Abdol Rahmani] Yes, there have not been any problems up until now.

[Tabataba'i Kia] How do we solve the rest of it, what is my role in this?

[Abdol Rahmani] I do not know if it can be said on the telephone.

[Tabataba'i Kia] Use codes, I will understand.

[Abdol Rahmani] I prefer that we speak on the other line.

[Tabataba'i Kia] Okay. I will call you right away on 75.

[Abdol Rahmani] Be speaking to you...

That is the end of the conversation. Apparently there was no wiretap on the other line...but the situation is clear. The transaction of the purchase of the nuclear warheads by Tehran is a fact. It further reinforces the assessments of intelligence personnel in the West, whereby the Iranians rated the matter of development of a military nuclear program very high on the list of national priorities. The amount of resources that the government of Iran is pouring into this project is also indicative of this conclusion. According to Western intelligence sources, this involves the sum of 800 million dollars per year for research only, not including purchases.

The infrastructure of Iranian nuclear research primarily relies on an infrastructure of know-how and personnel, which had been established back during the rule of the Shah, with U.S. assistance. Later on, good relations that had been established with Chinese, North Korean, and Indian scientists were taken advantage of. These governments welcomed Iranian dollars in exchange for arms transactions and the purchase of know-how. And last year, tempting contracts were also signed with a group of 50 former Soviet nuclear scientists and more than 200 technicians.

The two known centers of scientific development are located at Tehran University and at the nuclear center at Esfahan. At the same time, it is increasingly becoming known among Western intelligence services that the place that must be watched, more than any other, is Mo'alleh Khani-ye, approximately 150 km north of Tehran. This is a base—most of it underground—located within a settlement that appears to be civilian. Its residents are mostly members of the special units of the revolutionary forces, whose responsibility it is to guard

the site. Last February, when a delegation of the International Atomic Energy Agency visited Iran, its members asked to visit the site at Mo'alleh Khani-ye, as well. The Iranians did not refuse. They took the delegation to an entirely different settlement, which they had given the same name for just that opportunity...

Political observers note that since the end of the Gulf war, Iran's regional power has strengthened considerably. Its leaders seek to achieve primacy among the Gulf states in the oil-saturated region. Apart from conventional weapons, which have been purchased in recent years for the fantastic sum of 25 billion dollars, the leaders of the Islamic revolution are striving to achieve military nuclear capability. This will create a situation in

which it will not be possible to treat them in the manner in which Saddam Husayn was defeated.

And, of course, there is the ideological, theological, political struggle against Zionism. The great dream of Tehran is to arrive at the day in which it will be able to grant the Arab world a nuclear umbrella against Israel. The most circumspect intelligence assessment in the West now says that the extensive deployment and the diversified efforts that the Iranians are investing in this program of theirs are likely to bring about a situation in which they will be on the threshold of military nuclear capability by the end of the decade.

If they are not stopped.

COMMONWEALTH OF INDEPENDENT STATES

Six States Agree To Bar Weapons Technology Exports

LD0902190593 Moscow ITAR-TASS in English 1814 GMT 9 Feb 93

[Text] Moscow February 9 TASS—Six CIS states have reached an agreement in Moscow on Tuesday to begin cooperation in control over exports of raw materials, equipment, technologies and services which could be used for making weapons of mass destruction.

The agreement was reached at a meeting of the heads of the ministries of foreign economic relations of Armenia, Belarus, Kazakhstan, Russia, Tajikistan and Uzbekistan. They agreed not to make unilateral decisions on joining other multi-lateral export control unions without discussing it with other members of the agreement.

The parties will set up a working group within a month to coordinate export control activities.

Investigation of Uranium Theft in Udmurtia

93P50057A Moscow DELOVOY MIR in Russian 28 Jan 93 p 2

[Report by journalist Viktor Yevseyev: "Criminal Chronicle: How Much Is Uranium Selling for Today?"]

[Text] More and more often there are sinister and, unfortunately, reliable tales of attempts to ship radioactive materials out of Russia.

There is news from Udmurtia. The republic prosecutor's office is excited by a criminal case about the fact of the theft, illegal storage and sale of uranium. The investigating group has established that radioactive materials were stolen from the Chepetsk Mechanical Factory in the city of Glazov. Among those arrested are factory employees, unemployed persons, an officer of a military unit, and businessmen, among them foreign citizens. In the period from May through October of last year they stole 100 kilograms of uranium. Once they had established the necessary contacts, they began to sell the strategic material abroad, both inside and outside the CIS. Fortunately, not everything went smoothly for the malefactors. One of them was arrested in Brest, although only after he had sold several kilograms of metal to a citizen of Poland. Another was collared at Belarus Station in Moscow, so that he did not carry through his planned deal with a citizen of Lithuania.

Searches of the apartments of the arrested persons, as well of hidden locations they used, made it possible to recover 60 kilograms of radioactive material. Thousands of dollars and hundreds of thousands of rubles were also seized. Now, in the course of the criminal prosecution, the participation of responsible officials of the Chepetsk Mechanical Factory production association in the crime

which was committed is being checked out. The circumstances which made the crime possible are being investigated. Measures are being taken to find out other channels in Glazov for the theft and sale of radioactive material.

RUSSIA

Specialists Prevented From Leaving for DPRK

LD0902195393 Moscow ITAR-TASS World Service in Russian 1620 GMT 9 Feb 93

[By ITAR-TASS correspondent Yevgeniy Tkachenko]

[Text] Chelyabinsk, 9 February—A group of defense workers from Miass who tried to go and work in North Korea have returned to this Urals town, Valeriy Tretyakov, head of the Russian Ministry of Security's administration for Chelyabinsk Oblast Valeriy Tretyakov reported today. The ITAR-TASS correspondent has also learned that most of the group comprised staff of the Machine-Building Design Bureau in Miass.

The head of administration noted in an announcement for the press concerning this incident that last year a certain collective of technical and engineering workers engaged in problems of strategic missile armaments got together and were prepared to fly abroad. It is notable that last August about 10 of them, taking advantage of the confusion then existing in the system for granting permission for foreign trips, went to the DPRK. Convinced of the seriousness of the intentions of the "client," they returned home and started preparing in earnest for their departure abroad. They recruited additional experts in a certain field connected with the manufacture of strategic weapons.

Valeriy Tretyakov indicated that on the basis of the existing documents regulating the procedure for departure abroad of those with secret information, such a departure would have been possible if the state had allowed them to go. Russia, as we know, has signed the treaty on non-proliferation of strategic weapons and thus taken upon itself quite definite commitments, however. That is why, the head of the administration of the Ministry of Security said, the departure was prevented.

Smuggling of Restricted Materials Continues

PM0302153593 Moscow IZVESTIYA in Russian 2 Feb 93 p 7

[Article by Aleksey Tarasov: "Myths and Reality of Nuclear Contraband. Strategic Raw Materials Leak From Siberia by Land and by Air, Wholesale and Retail"]

[Text] The Radioactive "Phantom"

So-called "red mercury"—the riddlesome substance allegedly used in nuclear technologies—is extremely popular among businessmen trading in Krasnoyarsk Kray.

Here is what A. Samkov, chief of the Russian Federation Ministry of Security Krasnoyarsk Kray Administration says: "We have recorded numerous incidents, often initiated abroad, of interest being shown in 'red mercury.' Offers to buy this substance have been received in the kray from Poland, Germany, Hungary, and some firms in the United States. The spread of prices being offered is unbelievable: from 4,000 rubles [R] to \$80,000 per kilogram."

However, Krasnodar Kray state security officers have so far not found any real trace of "red mercury." And no wonder: Journalists and special services have been captivated by this secret, not only in Russia but in countries of the West. However, their search only confirms that the version that most probably "red mercury" will never be found, since, apparently, it does not exist either in nature, or in the laboratory. So too Samkov told me about his consultations with scientists: It is a fiction, a myth, high-level specialists have unambiguously asserted. But after all, crazy money is being offered—for what? The chief of the Krasnoyarsk state security organs possesses documents sent out by firms seeking the mysterious substance. These papers cite its chemical formula and unique density—20 kg per cc—and indicate packaging requirements, and so forth.

In short, the hunt for the radioactive "phantom" is being conducted at a serious level. Why? Who needs this? Samkov inclines to two versions: "Foreign organizations and special services need to initiate these searches in order to expose channels of possible leaks of nuclear materials. We also do not rule out that criminal groups need the camouflage of an operation with this product to export abroad uranium or plutonium. Or, possibly, precious metals."

The behavior of entrepreneurs inspired by the prospect of earning a tidy sum and contriving even to present a certificate for what they call "red mercury" is explicable; also understandable is the special services' suspicion. But passions for "red mercury" are also intensifying the unscrupulousness of journalists. Here is just one example, the very latest. NEZAVISIMAYA GAZETA publishes a piece on the feats of M. Mrnka, a Prague newspaper reporter who obtained a test tube containing "red mercury" in Russia. I quote from NEZAVISIMAYA GAZETA: "According to Mrnka's evidence, the mercury is produced in the famous Krasnoyarsk-25, which produces classic nuclear bombs." No such city exists. Just as surely as the people of Krasnoyarsk do not produce either classic or any other nuclear bombs; they only prepare the material for the innards of weapons.

It is not only radioactive "phantoms," however, that are being hunted. Special containers containing entirely tangible cesium are being stolen—not so long ago in search of this lethal substance, stolen from a Krasnoyarsk storeroom, a helicopter hovered over the city for several days, measuring the background radiation.

In principle the uranium business is also possible in the Krasnoyarsk region. The Russian Security Ministry

administration is concerned about a news story in the press about preparations for the sale to China of the latest standard fission plant equipment. "After all, it is top secret," the administration chief laments. Incidentally, in the electrochemical plant in Krasnoyarsk-45 (which is involved in uranium enrichment), deals with China are a routine affair: Equipment considered "scrap metal" in the plant was recently sold. But the Chinese would like to acquire from Krasnoyarsk-45 not just obsolete, but also the latest equipment, which is superior to Western models.

Peddlers Fight AIDS and Help the Pentagon

The interest of traders in precious and rare-earth metals is high. The most popular is osmium. This is because one kilogram of osmium-187 isotope is valued at around \$40 million. This is the figure cited by Krasnoyarsk special services sources. The security services know almost as much about the spheres of application of this metal as about the use of "red mercury." According to Samkov, hypothetically, osmium is used in radar equipment, electronic communications devices, medicine (and even, they say, in the treatment of AIDS). Osmium is also allegedly used in the production of the famous U.S. stealth planes.

"Osmium caught our interest because very many little-known firms are appearing, posing as consumers both of 'red mercury' and of this metal; we observe a predilection for osmium in structures involved in smuggling strategic raw materials," Samkov says. And here is a curiosity. Some relatively respectable people and organizations are also often interested in osmium, and refer to high recommendations and to government functionaries. They call on a special line, they introduce themselves, for example, as being from a cosmonauts' detachment.... It is all arranged highly respectably."

Aluminum Is Exchanged for Secondhand Rags

Sometimes you manage to learn of the contrivances of Russian metals dealers only from foreign sources. The Norwegian press recently told of the activity of the Krasnoyarsk firm "Interprayz-Briz," of whose existence locals hitherto knew, and even suspected, nothing. Nevertheless, the Norwegian journalists' research was confirmed.

Businessmen from this firm delivered 1,000 tonnes of aluminum for two Norwegian citizens—Reiulf Kraek and Ole Kvando, representing the firm "Michel." According to other sources "Michael" (afterward it was discovered that back home Kraek and Kvando are being hunted by creditors). So, the load reached Norway via Georgia (!) The aluminum was paid for in secondhand clothes valued at a mere 1 million kroner.

The dumping of Siberian metals on European markets is a particular nuisance to major Western concerns. Much is being said on this subject. For us, though, these "exports"—the impression arises—pass off without special consequences. The absence of legislation appropriate to the contemporary situation in the foreign economic sphere suggests that such trade has hitherto not attracted

serious public censure. Meanwhile, if these 1,000 tonnes of aluminum handed over for the price of scrap metal had been sold at world prices, several apartment blocks could have been built on the proceeds to house the inhabitants of the Korkino settlement, who are slowly dying from the emissions of the Krasnoyarsk Aluminum Plant.

As is well known, operation "Trawl" is continuing in Russia. The leader of the working group carrying out this operation, V. Krivenko, staffer of the Russian Ministry of Security Administration for Krasnoyarsk Kray, spoke of some of the results of this "trawling."

Two trucks loaded with nickel ingots were stopped in Smolensk Oblast. The vehicles were heading for Lithuania; there was no permit to export the raw material from Russia or waybill. An investigation discovered that the nickel was acquired in Norilsk by the "Zhilbytremon" production association, then sold in Moscow to the "Exspark" Aviation and Parachute Works Center, after which the metal was acquired by the Lithuanian firm "Sia." Losses of R5.5 million were averted.

The Riga limited liability company "Ankor" loaded an Il-76 airplane in Krasnoyarsk with 32.5 tonnes of cathode nickel worth R7.6 million. It was assumed that a course would be set for St. Petersburg. However, during the flight the liner asked permission to change course and land in Riga. Being refused, it was forced to land in Russia. An investigation discovered that "Ankor" had been fulfilling the instructions of "RTS," a private enterprise from the Moscow area.

Travelers from Kaunas—representatives of the "Litema" firm—bought 10 tonnes of cobalt from the Norilsk mining and metallurgical combine. Having loaded the metal on board an Il-76, they tried to fly to Vilnius. Both the crew and the businessmen declared wherever they landed that the plane was empty. The contrabandists were stopped in Petrozavodsk. The value of the losses averted comes to \$12 million.

Not only private firms, but also state enterprises engage in underground trade. In Voronezh a vehicle loaded with five tonnes of tin was detained. Without documents, it was heading for Ukraine, for Kremenchug. It turned out that the load belonged to the Novoyeniseyskiy Sawing and Woodworking Combine. The enterprise was fined R48 million.

Particular Signs of the New Business

Officials of the Security Ministry Krasnoyarsk Administration have compiled a catalog of the dodges employed in the strategic raw materials "black market": splitting up the load, frequently changing its destination, and phased exportation, for which military transport is not infrequently hired—because it is less often checked. Many intermediate firms participate, and to find the buyers and sellers is extremely problematic. Contraband freight flows mainly to Baltic shores. Less often to the Caucasus. With the tightening up of customs controls on the borders with the Baltic states the flow of nonferrous

metals has streamed toward them via Belarus. Other characteristic features are the forgery of documents, the practice of using figureheads and the credentials of a bona fide firm that has no idea that someone is acting in its name, and references to top functionaries. Not always, of course, without foundation. In A. Samkov's opinion, the scale of the underground trade in raw materials, the incredibly disadvantageous conditions and haste with which such operations are carried out, and the endowment of unknown firms with perquisites leads one reluctantly to suppose that it could not be done without suborning officials. And the Krasnoyarsk special organs do possess operational statistics on corruption.

The illegal export abroad of restricted raw materials has taken on mass proportions. It will become possible to effectively combat the peddlers who buy up Siberian metals wholesale and retail to sell them under the counter to the West only on condition that the relevant amendments are made to legislation. Listen to what Samkov has to say: "Right now we can institute proceedings only against the 'small fry' who steal a few ingots. It is impossible to proceed against the big dealers, even if we find them."

Supply of Cryogenic Technology to India Assured

BK1002072293 Delhi All India Radio Network in English 1530 GMT 9 Feb 93

[Text] Russia has reiterated its commitment to supply the cryogenic rocket technology to India despite objections by the United States. The visiting Russian minister for science and technology, Mr. (P.P. Shurin) [name as heard] said that it is now for the technical experts of both the countries to work out the modalities. The assurance was given during his discussions with his Indian counterpart, Mr. P.R. Kumaramangalam in New Delhi today. Both the ministers reviewed the Indo-Russian program of cooperation in science and technology. Mr. Kumaramangalam urged Mr. (Shurin) to pursue flexible credit terms for setting up two atomic power plants at Koodankulam in Tamil Nadu.

Plans To Build Detoxification Terminal Announced

PM0802151793 Moscow PRAVDA in Russian 5 Feb 93 p 1

[Report by Aleksey Vorotnikov under the rubric: "Short and to the Point": "Destroying Without Doing Great Harm"]

[Text] The press has been informed of the existence of previously classified chemical weapons stockpiles in Saratov Oblast. Over 1,000 tonnes of lewisite, mustard gas, and their compounds are located near the settlement of Gornyy in Krasnopartizanskiy Rayon. In order to destroy them without doing great harm to the environment, it is planned to construct a terminal for the detoxification of the poisonous substances.

Delegation Leaves for Arms Exhibition in U.A.E.

LD1302100293 Moscow ITAR-TASS World Service in Russian 0800 GMT 13 Feb 93

[By ITAR-TASS correspondent Andrey Naryshkin]

[Text] Moscow, 13 Feb—A Russian delegation led by Defense Minister Army General Pavel Grachev left for Abu Dhabi by plane this morning.

Russia is one of 27 states that received an official invitation to take part in an arms exhibition which will open in the capital of the United Arab Emirates on 14 February. The delegation will demonstrate some 370 of the most up-to-date items of defense output now in service in the Russian Army and Navy.

The ITAR-TASS correspondent was told on the eve of the delegation's departure by Viktor Glukhikh, chairman of the Committee for Defense Industries that Russia has abandoned "The completely unproductive idea that only weapons which are if not technically obsolete then at least technologically superseded" should be sold. "Russia is prepared to sell goods which are capable of successfully competing on all arms markets," he stressed. He said that in the future Russia would like to obtain from arms sales just such revenue as does the United States. Viktor Glukhikh said that this will be difficult to achieve, however: From 1990, volumes of deliveries of Russian arms abroad fell three to four fold, and the vacuum created was quickly filled by American firms.

At the "INDEKS-93" exhibition Russia intends for the first time to offer its potential customers an expanded service of armaments systems, to meet all customers' requirements, and to supply components and training personnel.

Yegorov Denies Alleged Sales of 'Strategic Materials'

93WP0104A Moscow DELOVOY MIR in Russian 16 Feb 93 p 12

[Interview with Nikolay Yegorov, Russia's deputy minister of Minatom, by Igor Mosin; place and date not given: "There Is More at Stake Than Nuclear Electric Power Stations"]

[Text] All of us are spectators at a thought-out and well-planned show to discredit Russian nuclear scientists in the eyes of the world. Nikolay Yegorov, Russia's deputy minister of Minatom [Ministry of Atomic Power and Industry], believes that penetration into the domestic nuclear market is the main goal of this game.

[Mosin] Nikolay Nikolayevich, hints and reports on alleged sales of strategic materials—uranium and plutonium—by unknown persons have appeared quite often in both ours and in foreign mass information media recently. An impression is created that we are ready to sell everything—including a nuclear bomb.

[Yegorov] Let us try to examine this. Two basic weapons-grade components—uranium and plutonium—are needed for the development of nuclear weapons. I state

officially that not a single one of our fellow-countrymen has sold even 1 gram of weapons-grade uranium or plutonium. And he will not sell. This is virtually impossible.

The uranium market, not to mention plutonium, is a very specific and sensitive thing.

The fulfillment of many conditions is needed in order to participate in it. Not a single firm will deal with you if you do not offer them. Furthermore, on this market many people know each other, as they say, by sight and any new figure immediately becomes the object of close attention. After all, strategic materials are involved.

Moreover, specialists also know this. In our country, as all over the world, there is a system of monitoring of fissionable materials. This system is the secret of every state. If you recall, secrecy has been on a high level in our country until recently. We believe that there are areas in which it should be maintained and preserved.

But, of course, not a single state in the world can protect itself against human greed, vanity, stupidity, and, simply, carelessness. These vices are characteristic of all people, regardless of where they live—in Russia, America, or China.

[Mosin] However, in addition to plutonium and uranium there are also other radioactive sources.

[Yegorov] In our country radioactive materials, in particular cesium and strontium, are used as part of the sources of ionizing radiation for various purposes in industry, construction, and medicine. The monitoring of them is quite strict. According to the rules, these materials are contained in a lead case. Many instances connected with the theft of radioactive materials indicate that not they are stolen, but the protective metal, which is in demand on the world market. Often people do not even suspect what is inside. Yes, these thefts point to elementary carelessness in work with radioactive elements. Without any doubt, the strictest order must be introduced here.

With regard to the stealing of radioactive isotopes for the purpose of selling them abroad, any, even the least knowledgeable, person knows: the game is not worth the candle. The foreign market is saturated with its own isotopes. They are also registered and controlled there. No serious firm—and in this area there are no dilettantes—will have anything to do with shady dealers, or harm its own reputation. This makes no sense.

I want to draw your attention: any report on this topic suffers from incompleteness. Let us assume that someone was caught somewhere and something was found. One has only to dig and it turns out that everything is not quite so. However, foreign mass information media are not uncomfortable operating on the wave of rumors, semi-hints, and incomplete information. If this happened once or twice, this could be included in the category of chance occurrences. However, this is already a phenomenon, a tendency. Consequently, something is behind this.

[Mosin] What, in your opinion?

[Yegorov] The market of radioactive materials is saturated. There is a fierce competition on it. The situation with nuclear power engineering is similar. Nuclear power engineering is undergoing a deep crisis all over the world now. After the energy slump in the 1970's the West began to actively introduce energy-saving technologies. At the same time, an upsurge in nuclear power engineering began. Both programs worked. Nuclear capacities were developed and, at the same time, energy consumption declined. What was to be done? After all, scientists, engineers, and specialists somehow must be kept fully occupied.

Judging by everything, the way out is seen in penetrating the Russian nuclear market. It is not so simple to do this. No matter what they say there, in the military area, space, and nuclear power engineering we were always on a world level. Therefore, an active campaign to discredit Russian nuclear scientists is now going on. Everything that they make, allegedly, is hazardous, poorly stored, unreliable, and so forth. The second background—we are ready to assume the heavy burden of increasing the safety of Russian AES's [nuclear electric power stations] and of producing and processing fuel.

I will answer: We ourselves can and will do this. In my opinion, to place such crucial facilities as AES's under the control of other states is elementary insanity. A so-called modern-style Trojan horse.

[Mosin] Nevertheless, agreeing with you on the fundamental question, that is, that we should solve our problems ourselves, I would like to note that the general political, economic, and social situation cannot fail to also affect nuclear power engineering, waste processing, and isotope storage.

[Yegorov] Of course, it has an effect. And we exert every effort to diminish this negative effect. A law on radioactive waste is now being drafted. This will be one of the basic laws within the framework of nuclear law. It affirms the division of functions of those who produce radioactive substances and those who will bury them. Plans are being made for the establishment of a state body, which will conduct a uniform policy on work with radioactive waste.

The functions of bodies of power are being delimited more clearly—who is responsible for what. A system of issue of licenses—who can work with radioactive substances—is being introduced.

[Mosin] Please tell me: What about the fuss that is raised from time to time in connection with the fact that radioactive waste is imported into the country and that we are turning into a dangerous dump?

[Yegorov] Nor do these rumors have a basis. Russia did not and does not import a single kg of foreign radioactive waste. We are importing spent fuel for processing from the countries where we have built AES's—Bulgaria, Hungary, Czechoslovakia, and Finland. However, this is a generally accepted practice. We are paid money—and

considerable at that—in hard currency for the recovery of this fuel. We also process the fuel of Russian AES's at the same enterprise.

[Mosin] Nikolay Nikolayevich, it seems to me that, for the most part, our society is extremely sensitive to such information on radiation, waste, and the unreliability of AES's not only because of Chernobyl. The general scientific and technical standard, which also includes nuclear problems, is low in our country. No one knows anything about doses, radiation, its effect, and consequences. Hence the fear and readiness to believe the worst versions. Our newspaper has written more than once that a country, which has nuclear power, must carry out educational work among its citizens.

[Yegorov] You are completely right. To be more specific, I believe that the lion's share of this work should lie on the shoulders of our ministry. We are expanding it, but, perhaps, not everything turns out as one would wish.

Incidentally, the present radiophobic campaign also encourages more active steps in this direction.

Nuclear Expertise, Materials Export Feared

934K0164A Moscow *LITERATURNAYA GAZETA* in Russian No 3, 20 Jan 93 p 13

[Article by special correspondent Kirim Belyaninov under the rubric "LITERATURNAYA GAZETA Investigation": "Escape"]

[Text] **I have no desire to persuade anyone of anything. I simply report that in the past two months 100 kg of uranium have been stolen from an enterprise in the city of Glazov....**

"So, let's go," he said, stubbing out in the ashtray a half-smoked Belomorina. "Let's go, if you are not afraid and you have the money. Only bear in mind that no one is about to specially watch out for you there...."

Sasha's profession is simplicity itself: he travels abroad. Once every two months the "boss," whom, incidentally, Sasha has never set eyes on, calls and, after chatting for a couple of minutes about the weather, gives an address in Tashkent, at which the "merchandise" has to be picked up. That, just about, is all. Sasha learns about the ultimate point of delivery, the itinerary, and other insignificant trifles in Tashkent. He is told the name of the country there also.

Strictly speaking, Sasha is distinguished from the tens of thousands of our compatriots grasping in organized fashion the rudiments of the market economy at the second-hand goods markets of Turkey, Poland, and China by just one thing: He travels abroad without passport or visa. And his freight is little reminiscent of the bundle of teapots and electric coffee percolators: five small—weighing about 50 kilos—knapsacks. One per member of the group.

"I almost never know what I will be carrying. On about three occasions this whole time the knapsacks have split,

and they contained lead containers, a kilo each, if that. Uranium, maybe, some other filth, perhaps. This does not worry me, I am paid."

Sasha goes most often to Afghanistan. A car takes his group to the border, and from there, by foot, over the mountains because crossing the border is easiest in the Pamirs. Already waiting on the other side is the "customer," who has taken up residence in a stagnant little village 40 km from the border. Sasha brings back money.

"I am the 'caravan-bashi,' the elder, and for this reason I would previously get \$800 for the 'walk,' and the boys, \$600. Now they pay \$1,000...."

'The Peaceful Atom in Every Home!'

A year ago a small Norwegian firm received a strange fax from Volgograd. It did not give its name but a very businesslike "small enterprise" was offering: 6-8 metric tons of heavy water (at a price of \$440 a kilo), 300 kg of red phosphorus (\$2,000 a kilo), and 10 kg of "red mercury" (\$240,000 a kilo). The businessmen from Russia promised in the form of an adjunct free of charge to provide at their expense official licenses for exportation of the "merchandise" and transportation. It was proposed bringing the heavy water straight from Murmansk, the phosphorus, by transit across Finland, and the mercury, via Austria.

The Norwegian firm was somewhat surprised and immediately notified Interpol of the attempt to sell materials used exclusively in nuclear power engineering and weapons production. But having tried far and wide to unearth the Volgograd "business association," Interpol officers found nothing. The small enterprise had simply vanished.

In the wake of this, reports of an escape of Soviet nuclear materials showered forth as if from a bucket. Three Hungarians and an Austrian were arrested on 8 January 1992 in Milan. At the time of the arrest at the hotel two glass vessels with inscriptions in Russian, and in them, 2 kg of so-called "red mercury," were found. A month later an entrepreneur from Milan, a frequent visitor to our country, offered two Israelis a chance to purchase large consignments of uranium, plutonium, and deuterium of Soviet origin. On 9 March the German police announced that two former citizens of the USSR had been attempting in Bavaria to sell 1.2 kg of "weapons-grade" uranium for 1.9 million deutsche marks. The West German magazine DER SPIEGEL then reported that one Herr Schliemann from Hamburg had received an offer from a Mr. Nikiforov from St. Petersburg for the purchase of uranium, heavy water, and red phosphorus....

But to each protest of the Western press Russian officials responded with an emphatic "no," stressing mainly the fact that there is simply no such thing as the product going by the name of "red mercury" which figures in almost every report and that our nuclear facilities are so securely guarded that it would be impossible to remove even a rusty screw from them.

"All this smacks more of a provocation," Aleksandr Gurov, deputy chief of the Center for Public Relations, declared at a news conference at the Ministry of Security. "Some people need to show that Russia is incapable of controlling its nuclear industry. And the second aspect is purely economic: Attempts are being made to squeeze us out of the world nuclear technology market."

Following so categorical a statement, the noise somehow subsided of its own accord, but certain details became known. "Red mercury," for instance, is perfectly real and on the list of Soviet military manufacturing is called "product 20-20." True, it will be used to develop fifth-generation nuclear weapons, virtually, and has no practical application as yet. But there is an even simpler explanation for the fact that no escapes from Russian nuclear facilities have yet been recorded: According to an international agreement of the suppliers of nuclear materials signed in 1977 in London, an escape of nuclear components is considered the disappearance of quite a significant quantity of the "product": no less than 25 kg of "weapons-grade" uranium-235, for example. Or no less than 1 tonne of that same heavy water.

"And what would be the point of me lugging your uranium by the tonne?" the entrepreneur, whom I had found on the recommendation of several Moscow raw material exchange brokers, burst out laughing in reply to my question. According to the references, it was he who had carried out several successful operations involving the exportation of Russian uranium abroad. "This is not nonferrous metal, so a kilo is perfectly sufficient for me. You have to wait a long time, of course, as the 'merchandise' is removed a gram or two a day, but it is worth it. A kilo of uranium-235 on the world market pulls in almost a million dollars, and it costs me about 20,000. Perhaps simply a crate of vodka. Plus, of course, shipping costs."

The plan of the trade, as my new acquaintance maintained, is simplicity itself. The suppliers are the employees of secret enterprises who are thoroughly conversant with the methods of negotiating numerous and really very serious security systems. The risk, of course, is great, but....

"See for yourself: A fellow has plowed away at his uranium-enrichment plant for 20 years and as a result he has a load of occupational illnesses, R10,000 a month, and a hungry family. And here is a chance to earn 20,000 not rubles but dollars. And this means that it will finally be possible to purchase an apartment for his daughter; this is roughly what apartments in the central zone or the Urals cost, fully furnished.

"Then everything is simple: the container with the uranium is packed into the trunk of a regular Zhiguli and heads for Lithuania, if the destination is Germany, to Belarus, if the freight is going by transit across East Europe; or to Murmansk, if it is more advantageous to use Norway."

"An escape is possible in principle," Arkadiy Chuvvin, deputy general director of the Tekhsnabekspost Foreign

Trade Association, which officially exports nuclear materials outside of the fatherland, indirectly confirmed. "Any chemical compound is declared on the customs form, for example, and that same heavy water is exported. Or uranium."

Illegal exporters of components do not worry about this particularly, incidentally.

"I have yet to see," one of them says, "a single customs house in the former Union equipped with instruments for measuring radioactive radiation levels. And to ensure that the machine is not inspected at all it is sufficient to hand over \$20."

He has places to choose from. On the territory of the former USSR there are 189 facilities connected with the extraction of nuclear raw material and its enrichment and the production of weapons components and systems. And this means 189 potential sources of "extraction." Of these, 151 facilities are located on the territory of Russia. Despite the chronic shortage of sausage and freely convertible currency, the USSR never experienced a shortage of one thing—nuclear raw material. Some 26,000 tonnes of uranium ore, given a maximum annual consumption of 8,800 tonnes, were extracted in the Soviet Union in 1990. It is for this reason that the production of weapons-grade uranium was halted in 1989 and that that of plutonium will be halted in 1995. According to the most cautious estimates, heavy water reserves are sufficient for up to the year 2010. This entire "merchandise" lies in repositories and is awaiting its customer.

Brothers in Arms

Although there is another way also. When the wave of "velvet" and not so velvet revolutions was rolling over East Europe and when CEMA, the Warsaw Pact, and a further dozen joint organizations were falling apart, it seemed that nothing other than a facile mutual hostility linked us to our former socialist camp brothers. But, as it turned out, there is still the International Nuclear Non-proliferation Treaty, according to which we are required to supply nuclear fuel and components for all facilities which we built in countries of the socialist camp. We built such nuclear stations in, for example, Bulgaria, Czechoslovakia, the GDR....

"We still supply fuel for the local nuclear electric power stations," Arkadiy Chuvyn says, "but following the disintegration of the socialist bloc, I cannot give any assurances that the uranium or plutonium which we supply to Czechoslovakia will not be resold to a third party."

The majority of experts evaluating the incidents involving the discovery of nuclear raw material in Germany, Austria, and Italy, incidentally, agree that it was obtained in just such a way.

But the assistance rendered by the Soviet Union was by no means confined to Europe. As of 1975 Soviet foreign trade organizations were supplying enriched uranium fuel for facilities in Libya, Iraq, Vietnam, India, Egypt, Argentina, and North Korea. The interest of Iraq or

North Korea in the manufacture of nuclear weapons goes without saying. Not that much is needed for this, incidentally: The simplest device requires approximately 25 kg of uranium enriched to 90 percent, although, if it is so desired, it is possible to manage with 40 kg of 80 percent enrichment. Uranium enriched to 80 percent was supplied for the research reactors in Libya, Iraq, and North Korea.

We Do Not Need the Turkish Coastline

Any physicist will tell you this: The disintegration of the Soviet Union with the subsequent collapse of the Army is oddly reminiscent of a nuclear reaction with a powerful and uncontrolled explosion. And the debris—nuclear weapons and specialists in their manufacture included—could simply fly off to neighboring countries. Pentagon experts believe that it will very soon be necessary to look for the tracks of the Soviet nuclear engineers in third world countries. Where there is a practically total absence of international nuclear control.

True, all attempts to confirm this theory proved until recently wholly unsuccessful. Only in the last year have British and German newspapers mentioned the names of 23 former Soviet nuclear engineers who have illegally gone after earnings overseas. But however much I tried to find these or similar names on lists of the Ministry of Atomic Energy Personnel Department, I drew a complete blank.

"Our specialists did, indeed, work at the nuclear research facilities in Iraq and in Libya and in North Korea, but, first, they did so entirely officially, in accordance with intergovernmental agreements, and, second, we have already terminated all research there," Andrey Gagarinskiy, deputy director of the Kurchatov Nuclear Energy Institute, says. "We will now work in Iran and China, but this work has nothing to do with nuclear weapons: We are building nuclear power stations."

The Ministry of Security, in turn, maintains unequivocally that speaking of a "nuclear brain" drain is as yet unwarranted. Nonetheless, I would venture to argue: The "nuclear brain" drain began at least two years ago. In 1986, following the signing of the Arms Reduction Treaty, Soviet nuclear centers sensed for the first time the approach of perestroika. For them this meant not only the loss of their customary privileges, like 10 types of sausage in the stores, but also the appearance of the first unemployed. Production was being wound down and whole laboratories and plants were being closed, and the nuclear engineers—top-class specialists—were for the first time proving unnecessary to that very country for whose sake they had voluntarily opted for a life behind the wire entanglements of the strictest secrecy.

And two years ago the first individual offers of work overseas appeared. Not all that profitable even but for a doctor of sciences from our leading nuclear centers—Arzamas-16 or Chelyabinsk-70—whose wage last spring even constituted R1,500—a monthly \$1,000 would appear very attractive. Although there were among the

offers more lucrative ones also: The Islamic Jihad organization sent Arzamas-16 a letter requesting that it be sold one atomic bomb. Giving the parameters, the sum of the transaction, and the mode of shipment.

The scandal broke suddenly, as scandals do, come to that. The rumors of the departure of "weapons engineers" to third world countries was confirmed by V. Barannikov, minister of security of Russia himself. Speaking at the last Congress of People's Deputies of Russia, he declared that employees of the former KGB had prevented the departure "to a third world country" of 64 specialists in the sphere of missile technology and nuclear weapons. It was ascertained after a while that what was meant by a "third world country" was North Korea, and ministry employees corrected their minister slightly, reporting that it had been a question only of "rocket scientists." The Ministry of Atomic Energy, however, said altogether that this statement would remain on the conscience of the minister of security and that no one from their ranks had "escaped" abroad.

"I am surprised merely by the fact that it was a question only of 64 specialists and, in addition, the fact that they were unable to leave," Andrey Gagarinskiy maintains. "Almost 1,000 persons from the Kurchatov Institute, who have concluded contracts with laboratories of the United States, Britain, and Germany, are working overseas at this time. And there are simply no obstacles which could keep if only some nuclear engineers in the country against their wishes."

Open any newspaper and you will find a heap of notices of private offices offering to provide a passport for overseas travel and a visa to any country in record time, as little as 24 hours. If there is the money. So it is perfectly sufficient for a nuclear engineer from the provinces to take leave in that same Moscow, call the number given by the notice, and obtain all the papers. And the reliability of the Russian system of control was graphically demonstrated by a Swedish journalist only a month ago. Having paid \$100, he obtained an absolutely official passport for overseas travel of a citizen of Russia.

"An official secrets act, and details of the manufacture of nuclear weapons, naturally, pertain here also, has yet to be adopted, and we cannot even determine who the vectors of the former are," Aleksey Kondaurov, deputy chief of the Center for Public Relations of the Ministry of Security of the Russian Federation, says. "Or, consequently, fully guarantee the fact that specialists in nuclear arms cannot leave the country."

I am not about to maintain that just one even of the 10,000 scientists in the possession of "nuclear secrets" of state importance can leave the country unimpeded. Ultimately there is a list of their names at any border point of Russia. But there is in addition a border between Azerbaijan and Iran which is 100 percent transparent, there are, finally, the Baltic border states, where Russian laws do not operate but to which a Russian citizen may travel without any particular problems. And

the reliance on patriotism placed long ago by the leadership of the Ministry of Atomic Energy, which does not tire of declaring that a feeling of love for the motherland is the principal distinguishing feature of the former Soviet "weapons engineers," will hardly be capable of containing the blows of inflation for long.

Transition to the Market Begins With a Crossing of the State Border

About 10 years ago the Semipalatinsk Nuclear Test Range was preparing to carry out a test. The holes for the two "items" had been prepared, the cables and sensors had been laid, and the test areas had been made ready. But at the very last moment it was noticed that there was only one "item." Almost two days were spent in negotiations with the Ministry of Defense, the Ministry of Medium Machine-Building, and a further dozen very serious organizations: Attempts were made to ascertain at what stage it had been forgotten to ship this "item" itself. Until an old shepherd showed up in the top-secret capital of the test range, the city of Kurchatov-21. And he reported that together with his flock of sheep he had come across a strange iron canister lying there in the steppe. Of some military purpose, by all accounts....

This episode of the lost bomb, about which I was told by about 10 persons at the test range, is oddly reminiscent, although smacking of an out-and-out tall story, of the present situation in our nuclear complex. Having announced total disarmament, termination, and nondeployment, we somehow forgot about the thousands of people living in the numbered cities. In the last two years production in four of them has been halted completely, and two nuclear test ranges have been closed. Nuclear physicists are now developing new models of refrigerators and manufacturing "per conversion" children's strollers. But this will last for a year or two, no more.

Plans to create an "Arab" nuclear bomb have already been announced in the Near East, and it is proposed producing the weapons-grade plutonium at the nuclear power station in Syria formerly built by Soviet specialists. Few people know as yet about the possibilities of the nuclear engineering of Iraq and North Korea created with the direct participation of the USSR. Both native uranium and plutonium and native specialists would, I am sure, be very apropos there.

I have no desire to persuade anyone of anything and I am not trying to prove anything. I simply report that two months ago a consignment of uranium weighing "only" 250 kg was impounded in Poland. And the tracks led to the small Udmurt town of Glazov. Removing the strategic raw material, workers of the numbered enterprise stored it in the most unlikely places: in the bathrooms of their own apartments, for example. Together with the laundry soap and washing powder. And the prices at which this uranium was sold differed quite considerably from the world price, what is more: a couple of bottles of vodka per kilo....

Statute on Dual-Use Nuclear Export Controls

93WP0098A Moscow KOMMERSANT in Russian No 5, 1-7 Feb 93 p 25

["Statute on Procedure for Exports From the Russian Federation of Dual-Use Equipment and Materials and Corresponding Technologies Used for Nuclear Purposes, Confirmed by Decree of the Council of Ministers-Government of the Russian Federation of 27 January 1993, No. 68," preceded by unattributed report: "Exports of Dual-Use Materials"]

[Text] The Russian government has confirmed a statute on control procedure for exports of dual-use equipment and materials and corresponding technologies used for nuclear purposes. In particular the statute makes provision for the preparation and issue of findings on the possibility of exporting goods included in a list approved by the president of the Russian Federation, and also for licensing and declaration of exports. Export is done only under one-time licenses issued by the Ministry of Foreign Economic Relations.

Statute on Procedure for Exports From the Russian Federation of Dual-Use Equipment and Materials and Corresponding Technologies Used for Nuclear Purposes, Confirmed by Decree of the Council of Ministers-Government of the Russian Federation of 27 January 1993, No. 68.

3. The procedure for control of exports of goods (work or services) from the Russian Federation provides for the following:

—preparation and issue of a finding on the possibility of exporting (transferring, exchanging) goods (work or services) set forth in the list of dual-use equipment and materials and corresponding technologies used for nuclear purposes which are exported under license, as confirmed by directive No. 827-rp of the president of the Russian Federation dated 28 December 1992 (referred to hereinafter as "the List");

—licensing and declaration of exports (transfers, exchanges).

4. Subjects of economic activity on the territory of the Russian Federation or in places (points) under the jurisdiction or control of the Russian Federation regardless of form of ownership entering into understandings (contracts, agreements) to export (transfer, exchange) goods (work or services) included on the List shall on a mandatory basis point out that these goods (work or services) or any copies made of them shall not be used by the importer for any activity associated with the development of nuclear explosive devices or activity in the field of the nuclear fuel cycle that are not under guarantees of the International Atomic Energy Agency [IAEA], and also the end users and kinds and locations of the use shall be indicated.

In the event that understandings (contracts, agreements) are reached with importers engaged in their activity in a country that is not among participating governments, obligations should also be placed on the importer that

the goods (work or services) acquired shall not be re-exported to third countries without the written permission of the exporter to do this, and agreed on a mandatory basis with the Russian Federation Export Control Commission of the Russian Federation government (the Russian Export Control). Permission to re-export may be obtained if the conditions listed in this clause are met.

Pledges with respect to guarantees should be specially formalized with the importer in the state organ of the importer country that regulates foreign economic activity, for each specific deal for delivery of each item included on the List that is exported.

5. Licensing for the export (transfer, exchange) of goods (work or services) included on the List shall be binding for all subjects of economic activity on the territory of the Russian Federation regardless of form of ownership and shall be done for all kinds of foreign trade activity, including direct production and scientific and technical links, maritime border and land border trade, and commodity exchange operations in accordance with this Statute.

The export (transfer, exchange) of goods (work or services) included on the List shall be done only under one-time licenses issued by the Russian Federation Ministry of Foreign Economic Relations.

Grounds for the issue of a license shall be the finding of the Russian Export Control with respect to the possibility of exporting (transferring, exchanging) goods (work or services).

To obtain a finding an application should be sent to the Export Control Department of the Russian Federation Ministry of the Economy (103009, Moscow, Okhotnyy Row, No. 1), which is the working organ of the Russian Export Control, formulated in accordance with the requirements established by the Russian Federation Ministry of Foreign Economic Relations.

Copies of the understanding (contract, agreement) and a document providing for guarantees of the importer that the object exported will not be used for any activity associated with the development of nuclear explosive devices or activity in the field of the nuclear fuel cycle not under guarantees of the IAEA shall be attached to the application.

A decision on issuing a finding shall be made no later than 20 days after the documents listed have been received by the department indicated.

In the event that it is necessary to hold consultations with participating governments with respect to the decision of the Russian Export Control, this period may be extended to up to three months.

The finding shall be sent by the export control department of the Russian Federation Ministry of the Economy to the Russian Federation Ministry of Foreign Economic Relations with a copy to the applicant.

The Russian Federation Ministry of Foreign Economic Relations shall (in the form agreed) send to the Russian

Federation Ministry of the Economy information on licenses issued on the basis of the finding.

6. Export (transfer, exchange) from the Russian Federation of goods (work or services) included on the List, and also their re-export, may not be done in the following cases:

- when there are proven instances of sub rosa or illegal acquisition by the importer of goods (work or services) used for nuclear purposes;
- when there are proven instances of use by an end user of materials, equipment, and technology acquired earlier for the purpose of developing nuclear explosive devices or in activity in the field of the nuclear fuel cycle not under IAEA guarantees.

7. In a case of refusal to issue a positive finding on the possibility of exporting (transferring, exchanging) goods (work or services) included on the List, on representation from the Russian Export Control the government of the Russian Federation shall inform participating governments of this.

The Russian Export Control may not issue a positive finding on the possibility of exporting (transferring, exchanging) goods (work or services) included on the List if they are in the main identical to goods (work or services) for export (transfer, exchange) for which permission has been refused by another participating government, without consultation with that government. In a case when a positive finding and license are issued after holding consultations, upon representation from the Russian Export Control the government of the Russian Federation shall inform the participating government of this in accordance with established procedure.

8. In the export of goods (work or services) included on the List outside the Russian Federation, the exporter shall submit to the organs of state customs control the one-time export license issued in accordance with established procedure by the Russian Federation Ministry of Foreign Economic Relations. This license shall be the basis for customs formalities.

The Russian Federation State Customs Committee shall (in the form agreed) submit to the export control department of the Russian Federation Ministry of the Economy and the Russian Federation Ministry of the Nuclear Power Industry information on export outside the Russian Federation of goods included on the List.

In the event of violation of the requirements set forth in this Statute the exporter shall be liable in accordance with Russian Federation law.

Notes

1. Activity associated with the development of nuclear explosive devices includes scientific research and the development, planning, production, creation, testing, or maintenance of any nuclear explosive device and of subsystems for such a device or its components.

2. Activity in the field of the nuclear fuel cycle not under guarantees includes scientific research, development, planning, production, creation, operation, or maintenance of any reactor, critical installation, conversion installation, fabricating installation, processing installation, installations used to separate isotopes in initial or fissionable materials, or separate storage installation if no pledge has been taken to adopt IAEA guarantees on the corresponding installation or any existing or future installation containing any source or special fissionable material or any installation producing heavy water, if no pledge has been taken to adopt IAEA guarantees for any nuclear material produced or used in connection with the production of heavy water in any such installation, or if any such pledge is not being met.

New Rules on Foreign Travel, Emigration

93WP0098B Moscow KOMMERSANT in Russian No 5, 1-7 Feb 93 p 25

["Decree of the Russian Federation Council of Ministers-Government No. 73 of 28 January 1993, Moscow City, on Measures To Safeguard the Right of Citizens of the Russian Federation to Free Exit From It and Unhindered Return, and Improvements in the Procedure for Workers' Business Trips Abroad", preceded by unattributed report: "New Rules for Traveling Abroad"]

[Text] It is the opinion of experts that the decree contains nothing fundamentally new. The only thing that might be considered new is that now a notation stating that a passport for travel abroad has been issued will be made in the document proving the identity of a citizen of the Russian Federation.

In connection with the extension from 1 January 1993 of the force of the law of the Russian Federation "On Procedure for the Exit and Entry into and from the USSR of Citizens of the USSR" dated 20 May 1991 to the territory of the Russian Federation, pending passage of a corresponding law of the Russian Federation and with a view to improving the procedure for sending workers on business trips abroad, the Council of Ministers-Government of the Russian Federation decrees as follows:

1. With the agreement of the Russian Federation Ministry of Security and Russian Federation Ministry of Foreign Affairs, the Russian Federation Ministry of Internal Affairs shall confirm and bring into force from 30 January 1993 interim rules for the issue and formalization of passports for use abroad for citizens of the Russian Federation. These rules will be published.

Procedure for the issue and formalization of diplomatic and service passports and passports for seamen shall be regulated by other rules.

2. In order to obtain passports for use abroad, organizations engaged in business trips shall make application to the state organs empowered to issue such documents. In

order to clarify possible grounds for temporary restrictions on the right to leave the Russian Federation these organs will agree matters pertaining to exit abroad with the organs of state security.

3. The right to reach decisions on the exit on business trips abroad by workers who have knowledge of information constituting a state secret shall be granted to the following:

a) the chiefs of central organs of the federal executive power in respect of workers in those organs, and also their enterprises, institutions, and organizations;

b) the chiefs of administrations in krais, oblasts, and autonomous formations and the cities of Moscow and St. Petersburg or commissions set up by them for these purposes, in respect of workers at enterprises, institutions, and organizations located on the corresponding territories, except for workers referred to in subclause "a" of this clause;

c) the chiefs of corresponding administrations, in respect of workers in these executive organs.

Decisions in respect of workers at enterprises, institutions, and organizations located on the territories of the republics making up the Russian Federation, except for workers referred to in subclause "a" of this clause, who have knowledge of information constituting a state secret, shall be made in accordance with the procedure established by the governments of those republics.

4. Ministries and departments and enterprises, institutions, and organizations shall within a period of 10 days submit to the appropriate organs of state security their findings on actual knowledge of a state secret, with their opinion as to the possibility of exit abroad, and if there are grounds for temporary restrictions on the right to exit abroad they shall indicate the period that the restrictions shall be in force.

5. To establish that a notation shall be made in the document certifying that a passport for abroad has been issued to the citizen certifying that the person is a citizen of the Russian Federation.

6. Citizens and organizations of the Russian Federation shall independently make applications to diplomatic missions and consular establishments of foreign states in the Russian Federation to obtain visas for passports for abroad.

7. The Russian Federation Ministry of Foreign Affairs and Russian Federation Ministry of Internal Affairs shall hold talks with the participation of interested ministries and departments with competent organs of Commonwealth of Independent States member states on procedure for issuing passports for abroad to citizens of the Russian Federation residing on the territory of other CIS states, and also passports for travel abroad by citizens of those states residing on the territory of the Russian Federation. The appropriate proposals shall be submitted in accordance with established procedure.

8. The Russian Federation Ministry of Finance together with the Russian Federation Ministry of Internal Affairs and Russian Federation Ministry of Security shall review the question of increasing the staffs of corresponding subdivisions of the Russian Federation Ministry of Internal Affairs and Russian Federation Ministry of Security and improving their material-technical equipment in connection with the increase in the volume of work to service Russian citizens traveling abroad, and shall submit appropriate proposals to the government of the Russian Federation.

9. The Russian Federation Ministry of Internal Affairs, Russian Federation Ministry of Security, and Russian Federation Ministry of Foreign Affairs together with the Russian Federation Ministry of Justice shall submit proposals on making changes to legislation in connection with the extension of the force of the Law of the USSR "On Procedure for the Entry and Exit into and from the USSR of Citizens of the USSR" to the territory of the Russian Federation, and with the adoption of this decree.

[Signed] V. Chernomyrdin, chairman of the Council of Ministers-Government of the Russian Federation

Illegal Export of Resources Erodes Security

934E0109A Moscow SOVETSKAYA ROSSIYA in
Russian 13 Feb 93 p 4

[Article by S. Aksenov, head of the Coordinating Working Group Under the Government of the Russian Federation: "Classified: The Critical Situation in the Sphere of Russia's Economic Security—Billions in Emigration"]

[Text] We present to readers' attention clear evidence describing the channels and enormous scope of the unprecedented plunder and pilfering of our common property. Published in full are the report of the competent commission (only coded references to particular materials are excluded from it) and excerpts from articles printed in various foreign publications during the days of February. Each of you is free to draw your own conclusions. We will merely note that the document on the condition of Russia's economic security was laid on the president's table; it seems, however, that no lessons are being drawn from it. So the comments of foreign journalists, which cannot be read without shame and pain, once again emphasize the country's leaders' unwillingness and complete inability to stop the unprecedented plunder.

As a supporting element of society, economic security requires the existence of a comprehensive mechanism of economic, political, and law enforcement measures which are called upon to support the state's national interests.

The situation which has taken shape in Russia in this sphere is becoming irreversible. The lack of a uniform concept of economic policy means that a mechanism of interdepartmental reconciliation to regulate all foreign policy actions on a scale of economic coordinates, which exists in all civilized countries, has not yet been launched

in our country. An axis of disagreement has appeared between sectorial and political ministries because of their leaders' different understandings of the meaning of Russia's national interests. Foreign policy actions are in reality not at all coordinated with the interests of the Russian economy.

The Ministry of Foreign Economic Relations is unable to offer a comprehensive foreign economic policy. The elimination of the monopoly on foreign trade resulted in the breakdown of the old mechanisms for shaping a uniform strategy in conditions where there are not even any outlines for creating new control mechanisms. As a result we are sustaining enormous losses both from the fundamental lack of coordination of the activities of the Russian organizations in foreign markets and from the illegal actions of various persons who use this situation for personal enrichment.

One gets the impression that this chaotic situation is being artificially supported on a fairly high state level, since certain persons who are using their state posts to realize the stage of initial accumulation of capital have an interest in it. The situation has become so obvious that even in the West the question is being asked: "Why isn't the Russian leadership taking effective steps to stop the plunder of Russia's national wealth?" Among other things, the calculations cited by West German experts show that this year alone Russia has sustained losses of from 10 to 15 billion dollars from the illegal outflow of hard currency abroad.

Our departments confirm this analysis too. The Russian Federation Ministry of Foreign Affairs mentions in its report that the illegal export of raw materials, energy media, and especially nonferrous metals from Russia to the Baltic and Southeast Asian regions, where a kind of "nonferrous fever" has developed, has become widespread. Given such a situation we cannot count on major investments in Russia's economy.

On the practical level the lack of a uniform trade policy has resulted in a situation where we, after plunging the world market in raw material goods (that is, the basic list of our exports) to the very bottom, are in fact selling off our strategic resources under extremely unfavorable commercial conditions. By publicly announcing forthcoming purchases of foodstuffs and indicating the list, we buy them at the highest prices. Moreover, the government's directives on sales, including of rare earth elements from the State Reserve (which are now being actively sold), are in fact a blow to all industry.

The point is that we are selling strategic reserves of metals, many of which were produced in the republics of the former USSR and are absent in Russia. As a result we will be forced to buy these metals not only abroad but at a price which will be dictated to us. Having obtained the right of foreign economic activity in accordance with the decree of the Russian Federation government of 12 January 1992, the Russian Federation State Reserve is in fact plundering the state's national wealth. The executive power's complete lack of control over this organization

opens up a broad range for intrigue. One case of selling cobalt (traced in the documents) alone clearly shows direct losses of 8 million dollars. Disgraceful things are going on at enterprises and installations subordinate to the State Reserve. The preservation of strategic and mobilization resources is not being properly ensured.

The theft of strategic raw materials from State Reserve warehouses has become a regular event. It is typical that the theft of 57 tonnes of cobalt worth 342 million rubles [R] was not reported to the internal affairs organs until a query on it from the Coordinating Working Group Under the Government was received.

Minister Anisimov, taking advantage of his official position, is openly lobbying the commercial structure for the Soveke joint venture, which was created with the participation of Finnish citizen B. Ekengren, who is mixed up in the illegal activity of the former associates of Lenfintorg and smuggling. Anisimov managed to transfer 100 million U.S. dollars worth of strategic metals to the Soveke joint venture under economic conditions which were very unfavorable to Russia. Licenses to export strategic metals, especially sponge titanium, were obtained at reduced prices (2,800 dollars per tonne instead of 4,100 dollars). On 10 April of this year Soveke was issued a license to export 500 tonnes of cobalt with the obligation to sell at 40,000 dollars per tonne, while the free market price at this time was 50,000 dollars per tonne.

The chosen buyer of the cobalt was a small, nonspecialized company, TPTs, which did not offer the Russian side any guarantees of payment for our strategic raw materials. As a result, since May of this year cobalt has been at the disposal of the TPTs company but has not been sold; so favorable conditions have been created for this firm to receive interest-free loans for commercial activity at the Russian Federation's expense (using this cobalt bank credits worth at least 15 million dollars can be gotten, while simply placing the capital obtained in a Western commercial bank yields about 500,000 U.S. dollars).

Official appeals to Ye. Gaydar have not brought results. The leaders of the MBES [Ministry of Foreign Economic Relations] (Aven and Shibayev) are in fact conniving with the associations under them in plundering Russia. Among other things Raznoimport is selling strategic metals and causing Russia serious losses. Through Raznoimport associates (especially Svanidze) who are at the same time members of the boards of directors of foreign companies our competitors are obtaining in advance all the commercial information on sales in preparation.

Thus, for example, using its ties in the MBES leadership, the American firm Interlink obtains strategic metals which it resells, often on the very same day, at higher prices. These transactions are carried out shamelessly and in fact openly. The president of Interlink, I. Rakelson, after looking over documents presented to him concerning just one cobalt deal, acknowledged the fact

that 210,000 dollars was owed to us and submitted a payment document whereby he committed himself to compensate for the losses by transferring the money to the Russian government's account. But when Rakelson appealed to Minister Aven, he blocked the transfer of the money to Russia.

A serious situation has developed with credits for the sale of foodstuffs. A member of the European Community Commission, P. Schmidguber, appealed to the Russian representatives on the matter of EEC [European Economic Community] credit guarantees for 500 million ecus for contracts for the purchase of meat. It shows that the prices which Prodintorg agreed upon with the suppliers were too high and not in Russia's interests. Schmidguber explained to Shibayev that these contracts were improper.

The present practice of issuing licenses for strategic raw materials is harming Russia. They are issued at reduced prices and often there are so many intermediaries that not only economic losses for Russia but even the "laundering" of money by mafia organizations cannot be ruled out.

There is broad opportunity for intrigue during the export of petroleum and petroleum products. This is the clearest example: since 2 December 1991 the Russian Petroleum Company, a joint stock company with 100-percent foreign capital, has been conducting operations with Russian petroleum despite the fact that under our laws the company is not really registered. As an analysis of a number of contracts for the sale of petroleum and petroleum products shows, the capital obtained from their sale is being used to buy consumer products, alcohol, chocolate, and such.

The real scope of the Russian Federation's economic losses can be illustrated by the following figures: according to Russian Federation Ministry of Internal Affairs data, more than 600 tonnes of nonferrous and rare earth metals have been stolen from various enterprises and installations of the metal-producing industry; those metals include, among other things, 86 tonnes of titanium, 6.2 of molybdenite, 4 tonnes of tungsten, and 3.3 tonnes of mercury. According to SVR [Foreign Intelligence Service] data, because of the steady influx of strategic raw materials illegally exported from the Russian Federation to the Western countries' markets, a black market in nonferrous and rare earth metals has formed there.

According to SVR data, 2 kilograms of Os-187 (the real price for the isotope is from 140,000 to 180,000 dollars per gram) were imported to Finland just in September of this year. According to data from Swedish customs, 45,000 tonnes of nonferrous metals were illegally exported from Russia to Scandinavia in the period from May through September of this year through Estonia alone. According to the estimates of the Swedish customs service, Russia's losses in the form of unreceived customs charges alone amounted to a sum on the order of 9 million U.S. dollars.

An objective economic evaluation of the situation described above allows us to draw the conclusion that the estimate of Russia's economic losses made by West German experts and cited above is at the very least correct or even too low.

In these conditions it is obvious that the national economy is on the verge of catastrophe. The squandering of the national wealth which has been undisguised since the late 1980s has brought us to the edge. The steady decline in the resource base of industry is already having the opposite result—a sharp drop in the overall production of strategic raw materials.

Taking into account the crisis condition of industry today, the raw material complex is a crucial source of survival for Russia. Given the state of affairs which has taken shape, paralysis of production in the extracting complexes will inevitably occur, and consequently this source of existence of our state will be eliminated. We will find ourselves in a vicious circle: the sale of raw materials will be needed to revive industry, and we will be unable to produce them because of the absence of the necessary resource base.

In connection with the critical situation which has taken shape concerning the Russian Federation's economic security, we have repeatedly appealed to G. E. Burbulis and Ye. T. Gaydar.

The Coordinating Working Group Under the Government of the Russian Federation was created on 23 July of this year to prevent illegal transactions involving Russian strategic raw materials and to provide compensation for losses incurred by Russia. During this period the group of Russian and foreign companies guilty of inflicting losses on the Russian Federation was identified; the sale of unprofitable contracts for cobalt was stopped; and the registration of companies which have operated in ways detrimental to Russia's interests was blocked. Moreover, a practical mechanism of cooperation with foreign countries to prevent illegal transactions involving Russian strategic raw materials began to take shape.

All this activity was cut off in connection with the instruction from Ye. Gaydar who on the basis of a joint complaint from Minister Anisimov and the general director of the Soveke joint venture (whose contracts were under expert examination by the Coordinating Working Group) completely blocked the group's work.

An analysis of the results of the group's activity shows that while structural deformations in the economy have not become irreversible, the foundation of Russia's existence must be rescued immediately.

It seems wise to do the following as primary "fire safety measures": put all sales of strategic raw materials under strict state control; bring functionaries who are making personal fortunes by robbing Russia to accountability; stop the purchase of consumer goods and luxury items using strategic raw materials; and use the revenue from

raw materials sold both to purchase food and to obtain equipment for the extracting sectors.

In order to realize these measures, a fully-empowered control mechanism which has the "right of last signature" on all export and import transactions with strategic goods must be immediately created.

BELARUS

Shushkevich Reinforces Nuclear Weapon Policy

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[Report prepared by Andrey Pershin, Andrey Petrovskiy, and Vladimir Shishlin; edited by Boris Grishchenko; from the "Presidential Bulletin" feature—following item transmitted via KYODO]

[Excerpt] Leader of the Belarusian Parliament Stanislav Shushkevich has rejected offers for the sale of nuclear and conventional weapons via broker - countries, chairman of the parliamentary commission for national policy and CIS affairs Mikhail Slemnev said speaking in an exclusive interview with Interfax.

He also spoke of a string of proposals by leading deputies and separate factions to declare ownership of the nuclear weapons deployed in the country to make the international community reckon Belarus as a large nuclear power. The parliamentary official said that there was no change in Shushkevich's tough policy of no gambling with nuclear weapons.

On the possibility of the country's joining the CIS collective security agreement as an associated member, Slemnev said the issue would probably come under discussion at the next session of the Belarusian Parliament. [passage omitted]

UKRAINE

Reportage on Nuclear Arms Control, Supervision

Marshal Shaposhnikov on N-Arms

OW2402173093 Moscow INTERFAX in English 1656
GMT 24 Feb 93

[Interview with Marshall Yevgeniy Shaposhnikov by Marina Chernukha; place and date not given—following item transmitted via KYODO]

[Text] Chief Commander of the Association of CIS Armed Forces Marshall Yevgeniy Shaposhnikov believes that if the problem of nuclear arms supervision in Ukraine is not resolved within six months, the republic's nuclear establishments "will represent a threat to the health of military personnel." The radiation levels around nuclear warhead sites are already much higher than normal, he said in an interview with Interfax correspondent Marina Chernukha.

Shaposhnikov said that Russia cannot delay the development and signing of an agreement on technical and

developmental supervision over nuclear establishments. According to an agreement signed by Russian President Boris Yeltsin and Ukrainian President Leonid Kravchuk, it should have been prepared by mid-February.

The marshal thinks there are forces in Ukraine, including in the parliament, who "out of ignorance or ambition want to change the republic's nuclear status." They say that without missiles Ukraine will become "an outsider state." The Ukrainian president, prime minister, and defense minister say they will ratify START-I and the Lisbon Treaty, said Shaposhnikov.

Kiev has officially announced that it will strive toward nuclear-free status, but it did not say what status it maintains today. Shaposhnikov believes that stance was caused by the Ukrainian leadership's desire "to look good before the world community and in front of their opponents in parliament."

No Progress in Talks With Russia

LD2402203693 Moscow ITAR-TASS in English 2030
GMT 24 Feb 93

[Text] Moscow February 24 TASS—A joint Russian-Ukrainian working group set up to oversee the elimination of nuclear warheads held a session in Moscow on Wednesday to discuss the removal, transportation and elimination of nuclear warheads stationed in Ukraine, the press service of the Russian Foreign Ministry said.

At the first round of talks held in Kiev between January 26-27, 1993, the Ukrainian side pledged to announce its position on the scale and terms of elimination of strategic offensive weapons temporarily deployed in Ukraine. However it failed to do so on Wednesday. Moreover, it turned [out] to be unprepared to discuss this issue which is directly connected with its obligations under the Lisbon Protocol obliging it to guarantee the elimination of all nuclear weapons stationed on its territory, including strategic offensive weapons within seven years as envisaged by the START Treaty.

Such position of the Ukrainian side obstructs further progress in the talks, the press service said.

Ratification of START I

OW2402165793 Moscow INTERFAX in English 1558
GMT 24 Feb 93

[Report prepared by Andrey Pershin, Andrey Petrovskiy, and Vladimir Shishlin; edited by Boris Grishchenko; from the "Presidential Bulletin" feature—following item transmitted via KYODO]

[Text] A leading member of the parliamentary commission on foreign affairs, Bogdan Goryn, believes that the Ukrainian president's statement as to the speedy ratification of the START-I treaty was "premature". "The president said so, because his station prompts this," the parliamentarian told the local press. According to him, parliamentary debates on the politico-legal, economic and military aspects of the treaty will take a long time. Goryn could not indicate even tentatively when the possible ratification of START-I might take place.

IF [INTERFAX] Note: At one of his recent meetings with journalists Leonid Kravchuk said: "Western concern in connection with the process of this treaty's ratification is understandable, since the emergence of several nuclear states in the former USSR might upset the balance of forces and call in question the agreements reached in the area of disarmament and nuclear arms non-proliferation." "I cannot allow Ukraine to take such an irresponsible step, as refusal to ratify START-1," the president said in mid February upon his return to Kiev from London. Nevertheless Kravchuk dismisses the allegations that the West, particularly Britain and the European Bank for Reconstruction and Development, link the issue of aid to Ukraine to the ratification of START-1 by the Ukrainian parliament.

In the agenda of the parliamentary session that began on February 16 the following issues were given top priority: elections to the Constitutional Court; draft bill on the cabinet of ministers; amendments and addenda to the bills on the privatization of housing and on military service; amendments and addenda to the Civil and Criminal Codes.

Missile Commander Denies Problems

*LD2402143793 Kiev Radio Ukraine World Service
in Ukrainian 1300 GMT 24 Feb 93*

[Text] A dual task—to support the high combat readiness of the missile system and to guarantee the full nuclear safety of personnel and the local population—is being resolved normally on the whole, Major General Mykola Filatov, commander of the force to which strategic nuclear missiles are attached, and which is located in a district of the town of Pervomaysk, stated to a correspondent from the Nikolayev newspaper YUZH-NAYA PRAVDA.

The local newspaper conducted this interview with him after an article entitled "A second Chernobyl is brewing in the missile silos of Ukraine" was published in the Moscow newspaper IZVESTIYA on 16 February. The situation is not at all as dramatic as portrayed in the newspaper, although we do have our problems, Mykola Filatov continued. However, this does not at all mean, he says, that these launchers pose a danger to the population.

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